



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

AKRON RUBBER DEVELOPMENT LABORATORY, INC.
2887 Gilchrist Road
Akron, OH 44305
Rick Behne Phone: 330 794 6600

MECHANICAL

Valid To: May 31, 2024

Certificate Number: 0255.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on rubber, plastics, textiles, latex, condoms, adhesives, sealers and adhesive tapes:

CONDITIONING

<u>Test Method</u>	<u>Test</u>
ASTM D618	Conditioning of Plastics for Testing
ASTM D832	Rubber Conditioning for Low Temperature Testing

ABRASION

<u>Test Method</u>	<u>Test</u>
ASTM C1353/C1353M	Abrasion Resistance of Dimension Stone Subjected to Foot Traffic Using a Rotary Platform Abraser
ASTM D1630	Rubber Property – Abrasion Resistance (Footwear Abrader)
ASTM D3389	Coated Fabrics Abrasion Resistance (Rotary Platform Abrader)
ASTM D4060	Abrasion Resistance Organic Coatings by the Taber Abraser
ASTM D5963	Rubber Properties – Abrasion Resistance (Rotary Drum Abrader)
BS ISO 4649	Rubber, Vulcanized or Thermoplastic – Determination of Abrasion Resistance using a Rotating Cylindrical Drum Device
DIN ISO 4649	Determination of Abrasion resistance using a rotating cylindrical drum device
ISO 4649	Determination of Abrasion resistance using a rotating cylindrical drum device
Ford FLTM BN 107-01	Crocking Test – Interior Trim Materials
ASTM D3884	Standard Guide for Abrasion Resistance of Textile Fabrics (Rotary Platform, Double-Head Method)

ELECTRICAL

<u>Test Method</u>	<u>Test</u>
ASTM D150	AC Loss Characteristics and Permittivity (Dielectric Constant of Solid Electrical Insulation)
ASTM D257	DC Resistance or Conductance of Insulating Materials
ASTM D991	Volume Resistivity of Electrically Conductive and Antistatic Products

EXPOSURE TESTING

<u>Test Method</u>	<u>Test</u>
<i>Accelerated Aging and Heat Resistance</i>	
ASTM D454	Rubber – Deterioration by Heat and Air Pressure
ASTM D572	Rubber – Deterioration by Heat and Oxygen
ASTM D573	Rubber – Deterioration in an Air Oven
ASTM D794 – 1993 (Withdrawn 1998)	Determining Permanent Effect of Heat on Plastics
ASTM D865	Rubber – Deterioration by Heating in Air (Test Tube Enclosure)
ASTM D1055 – 2009 (Parts 15-16) (Withdrawn in 2014)	Accelerated Aging Tests
ASTM D3045	Heat Aging of Plastics Without Load
ASTM D3574 (Test J)	Flexible Cellular Materials – Slab, Bonded, and Molded Urethane Foams – Steam Autoclave Aging
ASTM D3574 (Test K)	Flexible Cellular Materials – Slab, Bonded, and Molded Urethane Foams – Dry Heat Aging
DIN 53 508	Accelerated Ageing of Rubber
ISO 188	Rubber, vulcanized or thermoplastic – Accelerated Ageing and Heat Resistance Tests
JIS K6257	Rubber, Vulcanized or Thermoplastic – Determination of Heat Ageing Properties
SAE J2236	Determining Continuous Upper Temperature Resistance of Elastomers

LOW TEMPERATURE

<u>Test Method</u>	<u>Test</u>
ASTM D746	Brittleness Temperature of Plastics and Elastomer by Impact
ASTM D1329	Evaluating Rubber Property – Retraction at Lower Temperatures (TR Test)
ASTM D2137	Rubber Property – Brittleness Point of Flexible Polymers and Coated Fabrics
ISO 812	Rubber, Vulcanized or Thermoplastic – Determination of Low Temperature Brittleness
JIS K6261-1	General Introduction and Guide: Determination of low temperature properties

LOW TEMPERATURE (continued)

<u>Test Method</u>	<u>Test</u>
JIS K6261-2	Low temperature Brittleness
JIS K6261-3	Low temperature stiffness
JIS K6261-4	Low temperature retraction

ULTRAVIOLET FLUORESCENT LAMPS/XENON

<u>Test Method</u>	<u>Test</u>
ASTM D750	Rubber Deterioration Using Artificial Weathering Apparatus
ASTM D1148	Rubber Deterioration-Discoloration from Ultraviolet (UV) or UV/Visible Radiation and Heat Exposure of Light-Colored Surfaces and Xenon-Arc Apparatus
ASTM D2565	Xenon-Arc Exposure of Plastics Intended for Outdoor Applications
ASTM D4329	Fluorescent Ultraviolet (UV) Lamp Apparatus Exposure of Plastics
ASTM D4587	Fluorescent UV-Condensation Exposures of Paint and Related Coatings
ASTM D4799	Accelerated Weathering Test Conditions and Procedures for Bituminous Materials (Fluorescent UV, Water Spray, and Condensation Method)
ASTM D5208	Fluorescent Ultraviolet (UV) Exposure of Photodegradable Plastics
ASTM D5215	Instrumental Evaluation of Staining of Vinyl Flooring by Adhesives
ASTM D6662 (Section 6.3)	Polyolefin-Based Plastic Lumber Decking Boards
ASTM G151	Exposing Nonmetallic Materials in Accelerated Test Devices that Use Laboratory Light Sources
ASTM G154	Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials
ISO 4892-3	Methods of Exposure to Laboratory Light Sources – Fluorescent UV Lamps
MIL-DTL-85052B (Section 4.4.4.3.1)	General Specification for Clamp, Loop, Cushion: Ultraviolet Exposure
Navistar MPAPS GT-31 (2014)	Accelerated Weathering of Non-Metallic Materials
SAE J2020	Accelerated Exposure of Automotive Exterior Materials Using a Fluorescent UV and Condensation Apparatus
ASTM D4459	Xenon-Arc Exposure of Plastics Intended for Indoor Applications
ASTM D4637/D4637M (Sections 8.19 & 8.20)	Weather Resistance of EPDM Sheet Used in Single-Ply Roof Membrane
ASTM D6695	Xenon-Arc Exposure of Paint and Related Coatings
ASTM D6878/D6878M (Section 7.13)	Weather Resistance of Thermoplastic Polyolefin Based Roofing

ULTRAVIOLET FLUORESCENT LAMPS/XENON (continued)

Test Method	Test
ASTM D7869	Xenon Arc Exposure Test with Enhanced Light and Water Exposure for Transportation Coatings
ASTM F1515 (Water Cooled Xenon Only)	Measuring Light Stability of Resilient Flooring by Color Change
ASTM G26-96 (Withdrawn in 2000)	Operating Light-Exposure Apparatus (Xenon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials
ASTM G155	Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials
Boeing BMS 1-57L-2011 (Section 8.10)	Weather Resistance – Silicon Rubber, Extreme Low Temperature Resistant
Fiat 50451-2009 (Method A)	Accelerated Aging by Atmospheric Agents
Ford FLTM BO 116-01	Resistance to Interior Weathering
Ford ESB-M9P4-A-1978 ² (Withdrawn)	Rubber Parts – Migration Staining Against Paint
GM9902P-96 Withdrawn	Noncontact Staining Measurement of Elastomers (Xenon-Arc)
GMW 3414	Artificial Weathering of Automotive Interior Trim Materials
GMW 14162 (Methods A, B or D)	Colorfastness to Artificial Weathering
GMW 14650, 4.11	Compatibility
GMW 14743, Table 1	Elastomer for Wiper Blades – Paint Staining
Honda HES D2500-10 (Sections 3.12.1b & 3.12.2)	Light Resistance/Weather Resistance – Resin Materials for Vehicles
Honda HES D6601-99A	Accelerated Test Method for Light Resistance with Xenon-Arc Lamp
ISO 105-B02	Colour Fastness to Artificial light: Xenon Arc Fading Lamp Test
ISO105-B01	Color fastness to Daylight
ISO 105-B06 (Conditions 3, 4, 5 or 6)	Colour Fastness and ageing to Artificial Light at High Temperatures: Xenon Arc Fading Lamp Test
ISO 3865	Rubber, Vulcanized or Thermoplastic – Methods of Test for Staining in Contact with Organic Material
ISO 4892-1	Methods of Exposure to Laboratory Light Sources – General Guidance
ISO 4892-2	Methods of Exposure to Laboratory Light Sources – Xenon-Arc Lamps
ISO 11341-2004 ² (Withdrawn)	Paints and Varnishes – Artificial Weathering and Exposure to Artificial Radiation – Exposure to Filtered Xenon-Arc Radiation
ISO 30013	Rubber and Plastics Hoses – Methods of Exposure to Laboratory Light Sources – Determination of Changes in Colour, Appearance and Other Physical Properties
JASO M 305 (Section 5.14)	Weatherstrips for Automobiles – Weatherability Test
JASO M 346	Light-Exposure Test Method by Xenon-Arc Lamp for Automotive Interior Part
JIS B 7754	Light-Exposure and Light-and-Water-Exposure Apparatus (Xenon-arc Lamp Type)

ULTRAVIOLET FLUORESCENT LAMPS/XENON (continued)

Test Method	Test
MIL-STD-810G Method 506 (Procedure 11 Only)	Determining the Effects of Solar Radiation on Material
Nissan NES M0135 (Except 1-II-1B and 1-II-3 Using Air Cooled Xenon Lamps) (2008 Only)	Weatherability and Light Resistance Test Methods for Synthetic Resin Parts
PSA Peugeot – Citroen D27-1389-07	Paint Coatings Rubbers and Plastics Artificial Weathering by Weatherometer
Renault D27 1911 D-07	Rubbers and Plastic, Paint Coatings Artificial Ageing Using a Weatherometer
SAE J1885-2005 (Withdrawn in 2008)	Accelerated Exposure of Automotive Interior Trim Components Using a Controlled Irradiance Water Cooled Xenon-Arc Apparatus
SAE J1960-2004 (Withdrawn in 2008)	Accelerated Exposure of Automotive Exterior Materials Using a Controlled Irradiance Water Cooled Xenon-Arc Apparatus
SAE J2027 (Section 5.2.8)	Standard for Protective Covers for Gasoline Fuel Line Tubing, Chemical Resistance (Xenon-Arc)
SAE J2412	Accelerated Exposure of Automotive Interior Trim Components Using a Controlled Irradiance Xenon-Arc Apparatus
SAE J2527	Performance Based Standard for Accelerated Exposure of Automotive Exterior Materials Using a Controlled Irradiance Xenon-Arc Apparatus
Suzuki SES N3292-00 Methods WAL-2 & WAN-2	Test Methods of Weatherability and Light Resistance for Plastic Parts
Toyota TSH1585G-10 (Except Test Types IV & V)	Xenon-Arc Lamp Type Methods for Accelerated Weathering Resistance of Paint Film
Toyota TSL0601G-11 (Methods B & E)	Criteria for Test for Quality of Color Change by Aging
Toyota TSM0501G-03 (Section 9.20 with Atlas Ci65 or Equivalent)	Accelerated Weather (Light) Resistance Test
UL 1581 (Section 1200)	Sunlight Resistance
UL 2556 (Section 4.2.8.5)	Weather (Sunlight) Resistance
VW PV 1303-01	Exposure Test of Passenger Compartment Components
VW PV 3929-18	Non-Metallic Materials: Weathering in Dry, Hot Climate
VW PV 3930-17	Non-Metallic Materials: Weathering in Moist, Hot Climate
Yamaha YGK-8-501 (2008)	Painting – Accelerated Weatherability

ADHESION

<u>Test Method</u>	<u>Test</u>
AFG-01 - 1984	Adhesive for Field-Gluing Plywood to Wood Framing
ASTM D903	Peel or Stripping Strength of Adhesive Bonds
ASTM D2229 (Sections 10.5 to 12)	Standard Test Method for Adhesion Between Steel Tire Cords and Rubber
ASTM D3359	Measuring Adhesion by Tape Test
ASTM D3498	Adhesives for Field-Gluing Plywood to Lumber Framing for Floor Systems

CHEMICAL RESISTANCE

<u>Test Method</u>	<u>Test</u>
ASTM D471	Rubber Property – Effect of Liquids
ASTM D543	Evaluating the Resistance of Plastics to Chemical Reagents
ASTM D6284	Rubber Property – Effect of Aqueous Solutions with Available Chlorine and Chloramine
DIN 53 521 – 1987 (Withdrawn in 1999)	Determination of the Behavior of Rubber and Elastomers when Exposed to Fluids And Vapours
DIN ISO 1817	Determination of the effect of liquids
JIS K6258	Rubber, Vulcanized or Thermoplastic – Determination of the Effect of Liquids
ISO 1817	Rubber, Vulcanized or Thermoplastic – Determination of the Effect of Liquids
ASTM F146	Fluid Resistance of Gasket Material
GMW14334	Chemical Resistance to Fluids
NES M0133 2010	Testing methods of chemical resistance for plastic parts

COLOR

<u>Test Method</u>	<u>Test</u>
AATCC EP-1	Grey Scale for Color Change
ASTM D1003 Method B	Haze and Luminous Transmittance of Transparent Plastics
ASTM D2244	Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
ASTM E313	Calculating Yellowness and Whiteness Indices from Instrumentally Measured Color Coordinates
ASTM E1164	Obtaining Spectrometric Data for Object-Color Evaluation
ASTM E1331	Reflectance Factor and Color by Spectrophotometry Using a Hemispherical Geometry
ISO 105/A02	Grey Scale for Assessing Change in Colour
ISO 105/A04	Method for the Instrumental Assessment of the Degree of Staining of Adjacent Fabrics
SAE J1545	Instrumental Color Difference Measurement for Exterior Finishes, Textiles and Colored Trim

COMPRESSION

<u>Test Method</u>	<u>Test</u>
ASTM D395	Compression Set
ASTM D575	Rubber Properties in Compression
ASTM D623 Method A only	Heat Generation and Flexing Fatigue in Compression
ASTM D695	Compressive Properties of Rigid Plastics
ASTM D790	Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
ASTM D945	Rubber Properties in Compression or Shear (Mechanical Oscillograph)
ASTM D1055 (17-19) – 2009 (Withdrawn in 2014)	Compression Set Under Constant Deflection
ASTM D1055 (27-30) – 2009 (Withdrawn in 2014)	Low-Temperature Test (Compression/Deflection)
ASTM D1229	Compression Set at Low Temperatures
ASTM D3574 (Test C)	Compression Force Deflection Test
ASTM D3574 (Test D)	Constant Deflection Compression Set
ASTM D3575 (Section 9-16)	Flexible Cellular Materials Made from Olefin Polymers – Compression Set Under Constant Deflection
ASTM D3575 (Section 17-24)	Flexible Cellular Materials Made from Olefin Polymers – Compression Deflection
ASTM F1342 (Procedure A)	Protective Clothing Material Resistance to Puncture
ISO 178 Type I, II, III	Determination of Flexural Properties
ISO 815-1	Determination of Compression Set – at Ambient or Elevated Temperatures
ISO 815-2	Determination of Compression Set – at Low Temperatures
ISO 1653 - 1975 (Withdrawn in 1993)	Vulcanized Rubbers - Determination of Compression Set under Constant Deflection at Low Temperatures
ISO 3386-1	Determination of stress strain characteristics in compression-Low density materials
DIN EN ISO 3386-1	Determination of stress strain characteristics in compression-Low density materials
JIS K6262	Rubber, Vulcanized or Thermoplastic – Determination of Compression Set at Ambient, Elevated or Low Temperatures
ASTM D4014	Shear Modulus and Related Testing for Elastomeric Bridge Bearings
ASTM D1667 (Parts 16-20)	Compression Deflection Test Method
ASTM D1667 (Parts 21-25)	Compression Set Under Constant Deflection

CONDOM TEST (Except Burst Testing)

<u>Test Method</u>	<u>Test</u>
ASTM D3492	Rubber Contraceptives (Male Condoms)
ISO 4074 Except annex G, K, and section M.3	Natural Rubber Latex Male Condoms – Requirements and Test Methods
BS EN ISO 4074 Except annex G and section M.3	Natural Rubber Latex Male Condoms – Requirements and Test Methods
ASTM D7661	Determining Compatibility of Personal Lubricants with Natural Rubber Latex Condoms

CORROSION EVALUATION

SAE J1389	Corrosion Test for Insulation Materials
-----------	---

CRACK RESISTANCE

<u>Test Method</u>	<u>Test</u>
ASTM D813	Rubber Deterioration – Crack Growth
ASTM D1693	Environmental Stress – Cracking of Ethylene Plastics

DIMENSIONAL STABILITY

<u>Test Method</u>	<u>Test</u>
ASTM D1204	Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperatures
ASTM D3575 – Suffix S (Sections 35-42)	Flexible Cellular Materials Made from Olefin Polymers – Thermal Stability
ASTM D3767	Rubber Properties – Measurement of Dimensions

DENSITY

<u>Test Method</u>	<u>Test</u>
ASTM D792	Density and Specific Gravity of Plastics by Displacement
ISO 1183-1 Method A	Plastics – Methods for Determining the Density of Non-Cellular Plastics
ASTM D1667, X3	Suggested Test Method for Density (Suffix W)
ASTM D1622	Standard Test method for Apparent Density of Rigid Cellular Plastics
ASTM D3574 (Test A)	Density Test Urethane Foams
ASTM D3575 (Suffix W, Procedure A)	Density – Flexible Cellular Materials Made from Olefin Polymers

EXTENSION CYCLING FATIGUE/CUT GROWTH

<u>Test Method</u>	<u>Test</u>
ASTM D430	Rubber Deterioration – Dynamic Fatigue
ASTM D1052	Measuring Rubber Deterioration – Cut Growth Using Ross Flexing Apparatus
ASTM D4482	Rubber Property – Extension Cycling Fatigue

FLAMMABILITY

<u>Test Method</u>	<u>Test</u>
ASTM C1166	Flame Propagation of Dense and Cellular Elastomeric Gaskets and Accessories
ASTM D635	Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position
ASTM D3801	Measuring the Comparative Burning Characteristics of Solid Plastics in a Vertical Position
ASTM D5132	Horizontal Burning Rate of Polymeric Materials Used in Occupant Compartments of Motor Vehicles
USDOT FMVSS-302-03	Flammability of Interior Materials – Passenger Cars, Multipurpose Passenger Vehicles, Trucks and Buses
IEC 60695-11-10	50W Horizontal and Vertical Flame Test Methods
ISO 3795	Determination of Burning Behavior of Interior Materials
SAE J369	Flammability of Polymeric Interior Materials – Horizontal Test Method
UL94 (except sections 9,10,11 and 12)	Flammability of Plastic Materials for Parts in Devices and Appliances
VW TL1010-2008	Burning Behavior – Materials used in Vehicle Interiors

FOGGING CHARACTERISTICS

<u>Test Method</u>	<u>Test</u>
Chrysler LP-463DB-12-01 – 2000 Withdrawn	Fogging Resistance of Interior Materials
GMW 3235	Fogging Characteristics of Trim Materials
SAE J1756	Determination of the Fogging Characteristics of Interior Automotive Materials

FRICTION PROPERTIES

<u>Test Method</u>	<u>Test</u>
ASTM D1894	Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting

GLOSS (20°/60°/85°)

<u>Test Method</u>	<u>Test</u>
ASTM D523	Specular Gloss
ASTM D4039	Reflection Haze of High-Gloss Surfaces
Federal Standard 141D (Methods 6101.1, 6103 & 6104 only)	60°, 85°, 20° Specular Gloss
Ford FLTM BI 110-01	Measurement of the Gloss of Paint Panels
Honda HES D2500-10 (Section 3.10 only)	Gloss Test
JIS Z 8741	Specular Glossiness
ISO 2813	Gloss values at 20°, 60°, 85°

GLOVE TESTING

<u>Test Method</u>	<u>Test</u>
ASTM D120	Rubber Insulating Gloves
ASTM D3577	Rubber Surgical Gloves
ASTM D3578	Rubber Examination Gloves
ASTM D5151	Detection of Holes in Medical Gloves
ASTM D5250	Poly (Vinyl Chloride) Gloves for Medical Application
ASTM D6124	Residual Powder on Medical Gloves
ASTM D6319	Nitrile Examination Gloves for Medical Application
ARDL 2140	Lubricant Testing on Gloves
BS EN 455-1	Medical Gloves for Single Use – Requirements and Testing for Freedom from Holes
BS EN 455-2	Medical Gloves for Single Use – Requirements and Testing for Physical Properties
BS EN ISO 374-2	Determination of Resistance to Penetration

HARDNESS

<u>Test Method</u>	<u>Test</u>
ASTM D2240 (Types A, D, M, and OO)	Rubber Property – Durometer Hardness
DIN 53 505-2000 (Withdrawn in 2012)	Shore A and Shore D Hardness Testing of Rubber
ISO 868 (Types A and D)	Plastics and Ebonite – Determination of Indentation Hardness by Means of a Durometer (Shore Hardness)
DIN ISO7619-1	Rubber, Vulcanized or Thermoplastic-Determination of Indentation Hardness
JIS K 6253-2 M and CM only	Rubber, Vulcanized or Thermoplastic – Determination of Hardness (Hardness Between 10 IRHD and 100 IRHD)
ASTM D1415	Rubber Property – International Hardness
ISO 48-2 M, N and CM only (Withdrawn)	Rubber, Vulcanized or Thermoplastic – Determination of Hardness (Hardness between 10 IRHD and 100 IRHD)
ASTM D785 (Scale R)	Rockwell Hardness of Plastics and Electrical Insulating Materials

HDT/VICAT SOFTENING POINT

<u>Test Method</u>	<u>Test</u>
ASTM D648 (Method A)	Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
ASTM D1525 (Rate B)	Vicat Softening Temperature of Plastics
ISO 75-1	Determination of Temperature of Deflection under Load – General Test Method
ISO 75-2	Determination of Temperature of Deflection under Load – Plastics and Ebonite
ISO 75-3	Determination of Temperature of Deflection under Load – High-Strength Thermosetting Laminates and Long-Fibre-Reinforced Plastics
ISO 306 (Method A120)	Determination of Vicat Softening Temperature

HOSE TESTING

<u>Test Method</u>	<u>Test</u>
ASTM D380 (Except 14-17)	Standard Test Method for Rubber Hoses
ASTM D622	Rubber Hose for Automotive Air and Vacuum Brake Systems
SAE J1037	Windshield Washer Tubing

IMPACT

<u>Test Method</u>	<u>Test</u>
ASTM D256 (Method A)	Determining the Izod Pendulum Impact Resistance of Plastics
ASTM D4812	Unnotched Cantilever Beam Impact Resistance of Plastics
ASTM D5420	Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Hammer (Gardner Impact)
ISO 179-1	Determination of Charpy Impact Properties
ISO 180	Determination of Izod Impact Strength

INJECTION MOLDING TEST SPECIMENS

<u>Test Method</u>	<u>Test</u>
ASTM D3641	Injection Molding Test Specimens of Thermoplastics Molding and Extrusion Materials

MELT FLOW

<u>Test Method</u>	<u>Test</u>
ASTM D1238 (Procedures A, B & D)	Melt Flow Rates of Thermoplastics by Extrusion Plastometer
ISO 1133-1	Determination of the Melt Mass Flow Rate (MFR) and Melt Volume-Flow Rate (MVR) of Thermoplastics

ODOR TESTING

<u>Test Method</u>	<u>Test</u>
Delphi SD2-208 (Section 5.3.2) 2012	Odor Test
GMW 3205	Determining the Resistance to Odor Propagation of Interior Materials
GMW 14131	Compatibility of Interior Trim Materials with Amines
SAE J1351	Hot Odor Test for Insulation Materials
VDA 270	Determination of odor characteristics of trim materials

OZONE TESTING

<u>Test Method</u>	<u>Test</u>
ASTM D518-99 (Withdrawn in 2008)	Rubber Deterioration – Surface Cracking
ASTM D1149	Rubber Deterioration – Cracking in an Ozone Controlled Environment
ASTM D1171	Rubber Deterioration – Surface Ozone Cracking Outdoors or Chamber (Triangular Specimens)
ASTM D3395-99 (Withdrawn in 2008)	Rubber Deterioration – Dynamic Ozone Cracking in a Chamber
DIN 53 509-1-1990 (Withdrawn in 2011)	Resistance of rubber to ozone cracking
ISO 1431-1	Rubber, Vulcanized or Thermoplastic – Resistance to Ozone Cracking – Static and Dynamic Strain Testing
Ford BP 101-01	Degradation by ozone
FMVSS 106 TP-106 April 2008 (sections 12.A.13 & 12.B.6)	Laboratory test procedure for FMVSS 106 brake hoses
SAE J1401 Section 4.2.9 & 4.2.13	Hydraulic Brake Hose Assemblies for use with nonpetroleum base hydraulic fluids
GM4486P-1995(Withdrawn 2011)	Test for Ozone Resistance of Elastomer Compounds

RESILIENCE BY REBOUND

<u>Test Method</u>	<u>Test</u>
ASTM D2632	Rubber Property – Resilience by Vertical Rebound
ASTM D7121	Rubber Property – Resilience Using Schob Type Rebound Pendulum
DIN 53 512	Rubber, Vulcanized or Thermoplastic – Determination of Rebound Resilience
ISO 4662 (Pendulum Method)	Determining the Rebound Resilience of Rubber using the Schob Pendulum

SPONGE PROPERTIES

<u>Test Method</u>	<u>Test</u>
ASTM D1056 (Sections 16-22)	Compression-Deflection
ASTM D1056 (Sections 23-26)	Oil Immersion
ASTM D1056 (Sections 27-34)	Fluid Immersion
ASTM D1056 (Sections 35-42)	Compression-Deflection Change after Oven Aging
ASTM D1056 (Sections 43-49)	Water Absorption Test
ASTM D1056 (Sections 50-56)	Compression Set Under Constant Deflection
ASTM D1056 (Sections 57-61)	Low Temperature Flex Test
ASTM D1056 (Sections 62-68)	Density (Suffix W)

STAIN RESISTANCE

<u>Test Method</u>	<u>Test</u>
AATCC Evaluation Procedure 2	Grey Scale for Staining
ASTM D925	Rubber Property – Staining of Surfaces (Contact and Migration)
GM9240P-88 ² (Withdrawn 2013)	Perspiration Resistance
BN 103-01	Resistance of Coated Fabrics and Plastic Film to Migration Staining and Blocking
ISO 3865	Rubber, Vulcanized or Thermoplastic – Methods for Staining in Contact with Organic Materials
Nissan NES M0142-1991 (Section 18 & 19)	Staining/Indirect Staining

STIFFNESS

<u>Test Method</u>	<u>Test</u>
ASTM D1053	Rubber Property – Stiffening at Low Temperatures: Flexible Polymers and Coated Fabrics (Torsional Stiffness)

TENSILE TESTS

<u>Test Method</u>	<u>Test</u>
ASTM D412 (Method A)	Vulcanized Rubber and Thermoplastic Elastomers – Tension
ASTM D413	Rubber Property – Adhesion to Flexible Substrate
ASTM D429	Rubber Property – Adhesion to Rigid Substrates
ASTM D624	Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
ASTM D638	Tensile Properties of Plastics
ASTM D882	Tensile Properties of Thin Plastic Sheeting
ASTM D1002	Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal)
ASTM D1004	Tear Resistance (Graves Tear) of Plastic Film and Sheeting
ASTM D1708	Tensile Properties of Plastics by Use of Microtensile Specimens
ASTM D3163	Determining Strength of Adhesively Bonded Rigid Plastic Lap-Shear in Shear by Tension Loading
ASTM D3574 (Test E)	Flexible Cellular Materials – Slab, Bonded, and Molded Urethane Foams – Tensile Test
ASTM D3574 (Test F)	Flexible Cellular Materials – Slab, Bonded, and Molded Urethane Foams – Tear Test
ASTM F152	Tension Testing of Nonmetallic Gasket Materials
DIN 53 504	Determination of Tensile Strength

TENSILE TESTS (continued)

<u>Test Method</u>	<u>Test</u>
ISO 34-1	Rubber, vulcanized or thermoplastic – Determination of Tear Strength – Trouser, Angle and Crescent Test Pieces
ISO 34-2	Rubber, Vulcanized or Thermoplastic – Determination of Tear Strength – Small (Delft) Test Pieces
ISO 37	Rubber, Vulcanized or Thermoplastic – Determination of Tensile Stress-Strain Properties
ISO 527-1	Plastics – Determination of Tensile Properties
ISO 6383-1	Film and Sheeting – Determination of Tear Resistance – Trouser Tear Method
JIS K 6251	Rubber, Vulcanized or Thermoplastic – Determination of Tear Strength
JIS K6252-1	Rubber, Vulcanized or Thermoplastic- Determination of tear strength Trouser, angle crescent pieces
JIS K6252-2	Rubber, Vulcanized or Thermoplastic- Determination of tear strength Small (delft) test pieces
JIS K6252-2007 (Withdrawn)	Rubber, Vulcanized or Thermoplastic – Determination of Tensile Stress-Strain Properties
DIN 53 507 – 1983 (Withdrawn)	Determination of Tear Growth Propagation Trouser Test Piece
ASTM D3137	Standard Test Method for Rubber Property- Hydrolytic Stability

LOW TEMPERATURE BENDING

<u>Test Method</u>	<u>Test</u>
ASTM D2136	Coated Fabrics – Low Temperature Bending Test

VAPOR TRANSMISSION OF VOLATILE LIQUIDS

<u>Test Method</u>	<u>Test</u>
ASTM D814	Rubber Property – Vapor Transmission of Volatile Liquids

VOLATILE LOSS

<u>Test Method</u>	<u>Test</u>
ASTM D1203	Volatile Loss of Plastics Using Activated-Carbon Method

WATER ABSORPTION

<u>Test Method</u>	<u>Test</u>
ASTM D570	Water Absorption of Plastics
ASTM D3575 – Suffix L (Sections 26-32)	Flexible Cellular Materials Made from Olefin Polymers – Water Absorption
ISO 62	Plastics – Determination of Water Absorption
BS EN ISO 62	Plastics – Determination of Water Absorption
ISO 6916-1 Annex E	Flexible cellular polymeric materials-Sponge and expanded cellular rubber

CONVEYOR BELTING, FLAT TYPE

<u>Test Method</u>	<u>Test</u>
ASTM D378 (Section 9.2.2 to 9.5)	Preparation of test specimen and tensile, Elongation, hardness and test testing
ASTM D378 (Section 9.6)	Procedure for Physical properties of Elastomeric covers after heat Aging
ASTM D378 (Section 9.7)	Coefficients of Friction, Static and Kinetic
ASTM D378 (Section 9.8)	Abrasion Resistance
ASTM D378 (Section 9.9)	Ozone Resistance
ASTM D378 (Section 9.10)	Electrical Surface Resistance
ASTM D378 (Section 10)	Immersion Tests
ASTM D378 (Section 11)	Adhesion Tests

O-RING TESTING

<u>Test Method</u>	<u>Test</u>
ASTM D1414 (Section 7)	Dimensional Measurement
ASTM D1414 (Section 8)	Tension Testing
ASTM D1414 (Sections 10 & 11)	Compression Set Testing
ASTM D1414 (Section 12)	Low Temperature Retraction
ASTM D1414 (Section 13)	Relative Density
ASTM D1414 (Section 14)	Immersion Testing
ASTM D1414 (Section 15)	Heat Aging
ASTM D1414 (Section 16)	Hardness Testing

*Using customer generated test specifications based on the above parameters and testing technologies listed above.

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.

ASTM: C923, C1115, C1173, D378, D1056, D1248, D1414, D2000, D6878 / D6878M, E308, D751

DaimlerChrysler: MS-AG-81, MS-AR-20, MS-AR-23, MS-AR-24, MS-AR-26, MS-AR-30, MS-AR-80, MS-DC-16

Ford: ESF-M4D101-A, ESF-M4D423-A, WSK-M4D695-A Withdrawn,
WSS-M2D378-B1 Withdrawn, WSS-M2D379-B1 Withdrawn, WSS-M2D380-B1
Withdrawn, WSS-M2D381-B1 Withdrawn, WSS-M2D382-B1 Withdrawn

GM: GM6086M Withdrawn 2012, GM7001M Withdrawn 2011,
GMP.ABS.018R Withdrawn 2012, GMP.E/P.003 Withdrawn 2011,
GMP.E/P.029 Withdrawn 2010, GMP.E/P.071 Withdrawn 2011,
GMP.TES.012 Withdrawn 2013, GMP.EP.001 Withdrawn 2011,
GMP.PE.002 Withdrawn 2011, GMP.PE.003 Withdrawn 2011,
GMP.PE.004 Withdrawn 2011, GMP.PE.005 Withdrawn 2011,
GMP.PE.006 Withdrawn 2016, GMP.PE.007 Withdrawn 2011,
GMP.PE.009 Withdrawn 2011, GMN8423Withdrawn, GMN11106
Withdrawn 2010, GMW15473 Withdrawn 2015, GMW17408

ISO: 4074-1

JIS: K 6301:1995 (Withdrawn 1996)

Underwriters Laboratory: UL746B (UL 94 Only)



Accredited Laboratory

A2LA has accredited

AKRON RUBBER DEVELOPMENT LABORATORY, INC.

Akron, OH

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 19th day of April 2022.

A blue ink signature of Mr. Trace McInturff.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0255.01
Valid to May 31, 2024
Revised April 30, 2024

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