

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

SCI-LAB MATERIALS TESTING INC.
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MECHANICAL

Valid To: October 31, 2008

Certificate Number: 2743.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following types of tests on **Adhesives (Organic Resins), Glues, Paints, Varnishes, Inks, Coatings, Allied Products, Plastics, Resins, Rubbers, and Articles of Metal:**

TEST

TEST METHOD

Abrasion/Wear Resistance

Wearing Resistance to:	5-SFZS-008-3
Wear Resistance	ASTM D1175; TSL 2100G
Abrasion Resistance of Plastics Materials to:	ASTM D1242
Abrasion Resistance	ASTM D1630; NES M0136; NES M0141
Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser	ASTM D4060
Abrasion Resistance of Transparent Plastic to Surface Friction Induced Wear	ASTM D1044
Abraser Method Taber	DVM-0056-PA
Car Wash Simulation Test	GM 9150P
Resistance to Abrasion-Taber Abraser	GM 9600P
Abrasive Wear	SAE J948
	SAE J965

Adhesion/Cohesion

Adhesion by Tape Test	ASTM D3359; ASTM D3359A
Adhesion to Flexible Substrate	ASTM D413
Adhesion to Rigid Substrate	ASTM D429
Cohesive Strength of Sheet Plastics and Electrical Insulating Materials	ASTM D952
Cross Hatch Adhesion	DVM 0023-PA
Exterior paint System Adhesion	DVM-0023-PA
Adhesion Test	FLTM BO 106-01
Cold shock resistance	FLTM BU-109-02
Adhesion Requirement for External Plastic Trim Attached With Pressure	GM 3604 M

TEST**TEST METHOD****Adhesion/Cohesion (cont.)**

Adhesion Performance of Decorative Exterior Emblems and Script	GM 6271M
Knife Cross-Hatched Adhesion	GM 9502P
Molding and Emblem Adhesion Test Pluck Resistance	GM 9774P
Adhesion of water strips to paint	GM 9896P
Bond Strength	LP 463LB-10-01
Adhesion	LP 463TB-11-01
Shear Adhesion	LP 463TB-8-01
Bond Strength	MIL-STD-883E-2011.7
Adhesive Water Dispersion Type	MS-CB 124
Cross Peel Test for Automotive Type Adhesives for Fibre	SAE J1553
Primary Adhesion	TS 371-0-4, (10)

Ash Content

Ash Content in Thermoplastics	ASTM D5630
Determination of Ash Content	FLTM BO 006-01
Determination of Ash Content of Molding Materials	FLTM BO 006-02
Determination of Filler Content	FLTM BO 006-03
Resistance of Polyurethane Foam to Deterioration	FLTM BO 012-01
Determination of Inert Fillers in Polymers	FLTM BO 106-04
Ash Content of Molding Materials	FLTM EU BO 006-02
Ash Content	GM 9306P
Heat Exposure Test: Variable Surface	GM 9310P
Plastics - Determination of Ash	ISO 3451-4
Determination of Percentage Ash Solids	LP 463DB-13-01
Volatile Loss of Thermoplastic Materials	LP 463DD-4-01

Bend Test

Bend Test for Coating Adhesion	FLTM BI 009-05
Bending Test	ISO 1209
Plastics - Determination of Flexural Properties	ISO 178
Flexural Modulus	JIS K7203
Low Temperature-Mandrel Bend Test (Brittleness)	LP 463AB-25-01
Brittleness Temperature of Plastic Sheeting by Impact	ASTM D1790
Test Method for Brittleness Temperature of Plastics and Elastomers by Impact	ASTM D746
Brittleness Evaluation by means of a Mandrel	GM 9503P
Determination of the Brittleness Temperature by Impact	ISO 974

Chemical Resistance

Resistance of Plastic to Chemical Reagents	ASTM D543
Fluid Resistance of Gasket Materials	ASTM F146
Chemical Compatibility	DVM-0027-MA
Fluid Spotting Resistance	DVM-0037-PA
Chemical Resistance	GM 7452M

TEST**TEST METHOD****Chemical Resistance (cont.)**

Cleanability of Vinyl Coated Top Materials	GM 9147P
Gasoline Puddle Test	GM 9500P
Gasoline Dip Test	GM 9501P
Cleanability	LP 463KC-04-01
Acid Spot Test	LP 463PB-06-01
Resistance of Paint Films to Various Fluids	LP 463PB-31-01; LP 463PB-31-01B
Solvent Wipe Resistance Wipe Test	LP 463PB-7-01
Solvent Resistance, Migratory Staining, Ash Content	MS-DC634
Chemical Resistance Test Methods for Plastic Parts	NES M0133

Cleanability

Cleanability of Exterior Grained Surfaces	DVM-0012-OR
Soiling and Cleanability	DVM-0017-MA
High Pressure Wash	DVM-0041-PA
Cleanability Test for Outside Vinyl Coated Material	FLTM BN 012-06
Resistance to High Pressure Cleaning	FLTM BO 160-04
Cleanability of Textiles and Plastics, Test for:	GM 9126P
Cleanability of Vinyl Materials	GM 9156P
Exterior Finish High Pressure Water Wash	GM 9531P
Cleanability of Vinyl Coated Top Materials	GM9147P
High Pressure Car Wash Resistance	MDT-060

Coatings

Standard Test Method for Measurement of Coating Mass per Unit area on Anodically Coated Aluminum	ASTM B137-95
Discontinuous Chromium	ASTM B456
Plating Thickness	ASTM B487
Coating Thickness by the Magnetic Method:	
Nonmagnetic Coatings on Magnetic Base Materials	ASTM B499
Method for Measurement of Thickness of Metallic Coatings by the Coulometric Method	ASTM B504
Plating Adhesion	ASTM B571
Standard Guide for Measuring Thickness of Metallic & Inorganic Coating	ASTM B659
Layers in Multilayer Nickel Deposit (STEP Test)	
Standard Test Method	ASTM B764
Method for Non-destructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base	ASTM D1186
Dry Film Thickness of Non-Conductive Coatings Applied to a Nonferrous Metal Base	ASTM D1400
Water Resistance of Coating Using Water Fog Apparatus Testing	ASTM D1735
Ignition Properties of Plastics	ASTM D1929
Test Method for Volatile Content of Coatings	ASTM D2369
Test Method for Chip Resistance of Coatings	ASTM D3170

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TEST**TEST METHOD****Coatings (cont.)**

Film Hardness by Pencil Test	ASTM D3363
Film Thickness by Notched Gages Wet	ASTM D4414
Bond Strength	ASTM D751
Exterior Clearcoat - Scratch Resistance on Rigid Substrates	DVM-0058-PA
Coating quality standard	DWG 0096Z-SM4-0000
Chip Resistance Test for Painted Materials	FLTM BI 007-01
Chip Resistance Test for Painted Panels	FLTM BI 157-05
Chip Resistance	FLTM BI 157-06
Mar Resistance Determination for Automotive Coatings	FLTM BI 161-01
Plastic and Tapes Resistance to Protective Waxes and Dewaxing Materials	FLTM BO 155-01
Stone Chip Resistance	FLTM EU BI 057-02
Measuring Thickness of Electrodeposits and Anodic Coatings	GM 4260P
Chip Resistance of Coatings	GM 9508P
General Test Method for Coating	HES D 6501-97
Microscopic Plating Thickness	HES D6001, 4.2
Determination of Loss on Ignition	ISO 1172
Film Build	ISO 2808
Chip Resistance on Surface Coatings	LP 463PB-39-01
Exterior Paint Acid Etch Resistance	PA-0145
Test Method for Chip Resistance of Surface Coatings	SAE J400
Test Method for Electrodeposition Film Properties	TSH 1551G
Coating Quality of Plastic Painted Parts	TSH 3111G
Coating Quality of Plastic Parts	TSH 3130G
Electrodeposited Coating of Zinc	TSH 6500G

Cold Cracking

Cold Flexibility	FLTM BN 102-01
Cold Impact Test	FLTM BO 151-01; FLTM BO 151-02; GM 9011P
Cold Flexibility of Plastic Film and Sheet	FLTM EU BO 051-09
Cold Cracking Resistance of Interior Vinyl Materials	GM 9140P
Cold Slam Test	GM 9773P
Cold Cracking Resistance of General Trim Materials	LP 463LB-11-01
Pliability	LP 463LB-11-01B
Cold Impact Test-Bonded Moldings, Die-Cast Ornaments, and Appliqués	LP 463TB-9-01
Cold Cracking of Flexible Plastic Materials	SAE J323

Colour / Crock

Color Differences of Opaque Materials Visual Evaluation of:	ASTM D1729
Color Differences From Instrumentally Measured Color Coordinate	ASTM D2244

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TEST**TEST METHOD****Cold Cracking (cont.)**

Colors Using the CIE System	ASTM E308
Crocking Test	FLTM BN 107-01
Crockmeter Scuff Test	FLTM BN 108-10
Color Fastness to Rubbing	JIS L0823
Color Fastness to Rubbing Test Method for:	JIS L0849
Color Bleeding Resistance to:	LP 463KC-1-01
Crock Mar Resistance	LP 463PB-43-01
Crock Resistance	SAE J 861
Color Difference Measurement	SAE J1545
Crock Resistance, Dry & Wet	SAE J681
Color Change In by Ageing	TSL 0601G

Compression

Compressive Properties of Rigid Cellular Plastics	ASTM D1621
Compressive Properties of Rigid Plastics	ASTM D695
Compression Set and Dry Recovery	FLTM BN 015-01; FLTM BN 015-02
Compression Set of Polyurethane Foam	FLTM BN 015-07
Compression Load Deflection	FLTM EU BO 052-01
Compression Deflection	GM 6086M
Determination of Compression Set	ISO 1856
Compression Test of Rigid Materials	ISO 844
Compression Test of Urethane Foam Materials	LP 463DB-5-03
Compression Set Resistance to:	LP 463KB-5-01
Die Shear Strength	MIL-STD-883E-2019.5
Compression Recovery, Wet	SAE J1352

Corrosion

CASS Corrosion Resistance	ASTM B368
Corrosive Environments	ASTM D1654
Fan Cyclic Corrosion Test	DVM 0066-CF
Corrosion	DVM-0008
Painted Sheet Metal Corrosion Test	FLTM BI 123-01
Component Corrosion Resistance	FLTM BI 123-03
Acid Dissolution Test for Decorative Aluminum Parts	FLTM BQ 007-02
Corrosion Resistance	FLTM BQ 105-01
Acetic Acid Salt Spray Copper (Fog-CASS Test)	GM 4476P
Creepback Test - Corrosion	GM 9102P
Corrosion Creepback of Paint on Metal Substrate	GM 9511P
Corrosion Test	GM 9540P
CASS Exposure	NES M0138-91
Cyclic Corrosion Test Procedures for Painted Automotive Parts	SAE J1563

TEST**TEST METHOD****Deflection**

Deflection Temperature of Plastics Under Flexural Load	ASTM D648
Loading	IP-0021
Load Deflection Test	LP 463AB-5-04
Load Deflection Test	LP 463AB-5-08

Density / Specific Gravity

Density	ASTM B328
Test Method for Specific Gravity of Drying Oils, Varnishes, Resins, and Related Materials at 25/25°C	ASTM D1963
Test Method for Specific Gravity (Relative Density) and Density of Plastics by Displacement	ASTM D792
Density, Bulk Factor, and Pourability of Plastic Methods for Determining the Density and Relative Density of Non-Cellular Plastics	ASTM D1895 ISO 1183
Determination of Apparent Density Determination of Specific Gravity	ISO 845 LP 463FB-2-01

Dimensional Stability

Substrate Surface Appearance and Smoothness	DVM-0006-PA
Dimensional Stability-Interior Trim	DVM-6394
Overall Appearance	DY-0001
Determination of the Surface Roughness of Cold Rolled Sheet Steel	FLTM BA 003-01
Surface Roughness	FLTM BA-003-01
Dimensional Stability Test for:	GM 7400M
Dimensional Stability	ISO 2796
External Visual Inspection	MIL-STD-883E-2009
Internal Visual Inspection	MIL-STD-883E-2010.10
Resistance to Sagging	SAE J1530A
Dimensional stability	SAE J1717
Environmental Cycling/Dimensional Stability	SAE J1717, C85
Dimensional Stability of Automotive Textile Materials	SAE J883

Environmental/Ageing

Sunload Resistance	31826-SDS
Heat Age Exposure	32163-SDS
Heat Resistance to:	7710Z-S3VA-A010-M1
Xenon Arc-Type Light Exposure Apparatus With and Without Water for:	ASTM D2565
Heat Ageing of Plastics Without Load (A2LA Cert. No. 2743.01) 04/25/08	ASTM D3045

TEST**TEST METHOD****Environmental/Ageing (cont.)**

Fluorescent UV-Condensation Light-& Water Exposure	ASTM D4587
Carbon Arc Weathering Apparatus	ASTM D750
Environmental exposure	DVM -19195; DVM -19298
Sunload Resistance	DVM-31826
Heat Age Exposure	DVM-32163
Accelerated Light Resistance	ES-X33035; ES-X60210; ES-X83239
Color Matching with Artificial Light	FLTM BI 109-01
Fade (SAE J1885) Resistance of Materials to: Accelerated Exposure of Automotive Exterior Materials by Xenon Arc (SAE J1960)	FLTM BN 101-01 FLTM BO 101-03
Environmental Cycling	FLTM BQ 104-07
Resistance of Materials to Fade (SAE J1885)	FLTM EU BN 001-01
Xenon Arc Resistance to Artificial Weathering Cycle Exposure	FLTM EU BO 050-01 GM 3602M
UV heat exposure	GM 3803M
Test for Thermal-Oxidative Stability Characteristics of Plastics	GM 9059P
Carbon (Xenon) Arc Weatherometer Test	GM 9125P
Accelerated Ageing and Steaming	GM 9200P
Oven Ageing Test for Painted Plastics Substrates	GM 9504P
Automotive Environmental Cycles	GM 9505P
Light Aging Exposure	HES D 6601
Thermal Shock	IEC 66-2-38
Environmental Stability	IP-0023
Accelerated Aging Tests	ISO 2440
Heat, Humidity and Cold Ageing Test for Adhesives	LP 463CB-10-01
Weatherometer Test of Automotive Type Trim Materials	LP 463KB-12-01
Fadeometer Test-Automotive Trim Materials	LP 463KB-7-01
Heat Ageing of Trim Materials	LP 463LB-13-01
Weather-Ometer Test	LP 463PB-16-01
Fade-Ometer Test	LP 463PB-17-01
Weather Resistance	LP 463TB-2-01
Sunload resistance	MA 0128, 31826
Simulated Sunload Resistance- Exterior	MA-0128
High Temperature Test	MIL-STD-810E-501.3
High Temp Test	MIL-STD-810F-501.4
Low Temp Test	MIL-STD-810F-502.4
Temperature Shock	MIL-STD-810F-503.4
Rain Method	MIL-STD-810F-506.4
Humidity	MIL-STD-810F-507.4
Sand and Dust	MIL-STD-810F-510.4
Immersion	MIL-STD-810F-512.4
Stabilization bake	MIL-STD-883E-1008.2
Heat Cycle Resistance, Fading Resistance, Chemical Resistance, Scratch Resistance	MS-210-05
Infrared Exposure	NES M0131-94
Sunshine Weatherability	NES M0135-96
Resistance To Heat Aging	SAE J1717, B85

TEST**TEST METHOD****Environmental/Ageing (cont.)**

Accelerated Exposure of Automotive Interior Trim Components (Xenon Arc)	SAE J1885
Accelerated Exposure of Automotive Exterior Materials Using a Controlled Irradiance Water-Cooled Xenon Arc Apparatus	SAE J1960
Accelerated Environmental Testing for Bonded Automotive Assemblies	SAE J2100
Xenon-Arc Apparatus	SAE J2212
Test Method for Weather Resistance of Paint Film	TSH 1512G
Sunshine Carbon Arc	TSH 1528G
Carbon Arc Test Methods for Accelerated Weathering Resistance of	TSH 1582G
Carbon Arc Weatherometer Test	TSM 5512G

Fatigue

Wear resistance	ASTM D3884
Dynamic Fatigue	ASTM D430
Cycling Fatigue	ASTM D4482
Heat Generation and Flexing Fatigue in Compression	ASTM D623
Flex fatigue of Plastics by Constant-Amplitude-of-Force	ASTM D671
Flex fatigue	CPNM-MOS-ST-10-04-07-E
Wear resistance	GM 9516P; MS-JP7-3; SAE J1530

Flammability

Test Method for Rate of Burning and/or Extent and Time of Burning of Self-supporting Plastics in a Horizontal Position	ASTM D635
Flammability of Interior Material	ES-X60410
Flammability Test for Trim Materials	FLTM BN 024-01
Flammability Test for Automotive Materials	FLTM BN 024-02; FLTM BN 24-2
Flammability Test for Automotive Interior Materials	FLTM EU BN 024-02
Flammability	FMVSS 302; HES C206; HES D 6003; ISO 3795; MES CF 050; MS-300-8; TSM 0500G
Flammability of Automotive Interior Materials-Horizontal Test Method	FMVSS 571.302
Flammability of Materials, Requirements	GM 6090M
Flammability of Materials	GM 9070P
Flammability of Automotive Interior Trim Material	LP 463KC-13-01
Flammability for Interior Parts	MES CF050D
Flammability of Interior Materials for Automobiles	NES M0094
Flammability of Automotive Interior Materials-Horizontal Test Method	SAE J369
Flammability of Automotive Interior Materials	SAE J393
Flammability of Plastic Materials for Parts in Devices and Appliances	UL 94

TEST

TEST METHOD

Flexible Materials

Stiffening at Low Temperature: Flexible Polymers and Coated Fabrics	ASTM D1053
Specification for Flexible Cellular Materials Sponge or Expanded Rubber	ASTM D1056
Flexible Cellular Materials-Slab, Bonded, and Molded Urethane Foams	ASTM D3574
Flexible Cellular Materials Made from Olefin Polymers	ASTM D3575
Flex Properties of Un-reinforced and Reinforced Plastics & Electrical Insulating Materials	ASTM D790
Flexibility of Non-Metallic gasket Materials	ASTM F147
Stress Crack Resistance	TS 371-0-4, (33)

Fogging

Fogging Test (SAE J1756)	FLTM BO 016-02
Fogging Test (SAE J1756)	FLTM BO 116-03
Fogging Test	FLTM EU BO 016-02; GM 9305P
Fogging	GM 2212; LP 463DB-12-01; TSL 57056
Glass Fogging	HES D 6508
Fogging of Interior Material	HES D 6508-95
Test Procedure to Determine the Fogging Characteristics of Interior Automotive Materials	SAE J1756
Fogging Test Method for Non-metallic Materials	TSM 0503G

Hardness

Hardness	ASTM D1415
Indentation Hardness	ASTM D1474
Scale R, L, M, E, K	ASTM D785
Standard Hardness Conversion Tables for Metals	ASTM E140
Microhardness of Materials Test Method for:	ASTM E384
Microhardness	ASTM E92; GM 9054P
Pencil Hardness of Paint Films	FLTM BI 151-01
Hardness	GM 6010M; SAE J1237
Hardness Test and Hardness Number Conversions	GM 9053P
Determination of Hardness (Indentation)	ISO 2439
Determination of Indentation Hardness by Means of a Durometer (Shore Durometer)	ISO 868
Pencil Hardness Test	LP 463PA-2-01
Hardness Test and Hardness Number Conversions	SAE J417
Test Method for Hardness of Paint Film	TSH 1500G

Haze

Haze and Luminous Transmittance of Transparent Plastics	ASTM D1003
Haze of High-Gloss Surfaces	ASTM D4039
Standard test method for Specular Gloss (A2LA Cert. No. 2743.01) 04/25/08	ASTM D523

TEST**TEST METHOD****Haze (cont.)**

Glass Haze

TSM 1564G

Humidity

Humidity Ageing

32067-SDS; DVM-32067; LP 463AB-24-01

Practice for Test Water Resistance of Coatings in 100%
Relative Humidity

ASTM D2247

Humidity aging for tape attachments

DVM-19297

Humidity Resistance

FLTM BI 104-02

Humidity Test

GM 4465P

Composite Temperature /Humidity Cyclic Test

IEC 68-2-38 Test Z/AD:

Humidity Cabinet Test

LP 461H-15

Resistance to Humidity, Hot, and Cold Cycling of Trim
Materials

LP 463LB-12-01

Humidity Exposure

LP 463PB-09-01

Condensing Humidity Resistance Test

LP 463PB-9-01

Humidity

MIL-STD202F-103B

Impact

Cold Impact

77211-SJC-A000-20

Impact Resistance of Plastic Film by Free-Falling Dart
Method

ASTM D1709

Test Methods for Impact Resistance of Plastics and
Electrical Insulating Materials

ASTM D256

Test Method for Impact Resistance of Rigid Plastics
Sheeting or Parts by Means of a Tup (Falling Weight)

ASTM D3029

Impact Strength of Plastics Un-notched Cantilever Beam

ASTM D4812

Impact Resistance by Means of a Falling Weight (Tup)
(Gardner)

ASTM D5420

Interior Impact

FMVSS 201

Test for Determining Impact Strength of Plastics

GM 9032P

Impact Test for Plastic Materials

GM 9300P

Impact Test Exterior Body Side Moldings

GM 9528P

Multi-Axial Impact

GM 9904

Impact Resistance

HES D 2500

Impact Durability

Honda 3575Z-SNA-0000, 3.18

Test Ef: Impact, Pendulum Hammer. Amendment 1
(1993)

IEC 68-2-62

Determination for Multiaxial Impact Behaviour of Rigid
Plastics - Falling Dart Method

ISO 6603-1

Multi-Axial Impact Testing

ISO-6603-2

Izod Impact test

JIS K7110

Impact Test

LP 463DB-14-01

Impact Resistance

LP 463PB-19-01

Falling Ball Impact test Methods for Synthetic Resin
Parts

NES M0134

Cold Impact

PF-11014, 3.3

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TEST**TEST METHOD****Impact (cont.)**

Impact Resistance Plastic Parts (Gardner)	PF-4992
Impact Resistance Seat System Plastic Ornamentation	ST-0005
Impact resilience	TSL-3505G

Melt & Melt Flow Rate

Flow Rates of Thermoplastics by Extrusion Plastometer	ASTM D1238
Melting Point	FLTM BO 21-2
Melt Viscosity	GM 9301P
Melt Flow Rate	ISO 1133

Miscellaneous

Thickness	ASTM D5736
Mass	SAE J860
Stress Corrosion Cracking Using the Mercurous Resilience Using a Rebound Pendulum	AS-2136-1977
Standard test Method for Boiling Point of Engine Coolants	ASTM D1054
ASTM D1120	
Volatile Loss From Plastics Using Activated Carbon Materials	ASTM D1203
Softening Point	ASTM D1525
Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing, and Fittings	ASTM D1599-99
Stress-Cracking of Ethylene Plastics	ASTM D1693
Water In Liquid Petroleum Products by Karl Fischer Reagent	ASTM D1744
Particle Size (Sieve Analysis) of Plastic Materials	ASTM D1921
Weight Loss of Plasticizers on Heating	ASTM D2288
Specular Gloss of Plastic Films	ASTM D2457
Resilience by Vertical Rebound	ASTM D2632
Heats of Fusion and Crystallization of Polymers by Thermal Analysis	ASTM D3417
Transition Temperatures of Polymers by Thermal Analysis	ASTM D3418
Mass	ASTM D3776
Determination of Properties of Polymetric Materials by Means of a Capillarity Rheometer	ASTM D3835
Specular Gloss Standard Test Method for:	ASTM D523
Flash Point	ASTM D56
Standard Test Method for Determination of Moisture in Plastics by Loss in Weight	ASTM D6980-04
Plasticity and Recovery (Parallel Plates Methods)	ASTM D926
Creep Relaxation of a Gasket material	ASTM F38
Water Resistance	DVM 0026-PA
Seat System Material Performance	DVM-0005-ST
Surface Friction	DVM-0011-BPv3

TEST**TEST METHOD****Miscellaneous (cont.)**

Wax Build-Up on Grained Surfaces	DVM-0013-OR
Contaminants in Textile Material, Test of:	FLTM AN 101-03
Under-vehicle and Under-hood Component Rating Scale	GM 8101G
Mildew Growth	GM 9128P
Compatibility of Vinyl Materials and Leather	GM 9141P
Stress Mark Susceptibility	GM 9302P
Dust out test	GM 9635P
Fiber degradation	GM 9771P
Tape Wet-Out Test	GM 9837P
High Altitude Test	IEC 68-2-13
Hydraulic Fluid Power - Fluids - Method for Coding the Level of Contamination by Solid Particles	ISO 4406
Method for Moisture Rain & Spray Test for Automobile Parts	JIS D0203
Friction Index	LP 463AB-52-01
Resistance to bearding and fuzz	LP 463KB-21-01
Water Spot and Soap Spot Test	LP 463PB-8-01
Softening Temperature of Plastics - Vicat	LP 463TB-14-01
Separation Strength	NES M0152
Resistance to water wicking	SAE J1913
Surface Match Verification Method for Pressure Sensitive Adhesively	SAE J2215
Halide Test Using Halide Test Kits	SLTP 700-017
Load Test	SPP-GTP-2005
Test Method Regarding Material Properties for Plastic Consoles	TSF 7354G
General Test Methods for Vinyl Leathers	TSL 5100G
Moisture content	TSL-3505G
General Test Method for Plastic Parts	TSM 0502G
Safety Pad Materials with Vacuum-Formed Outer Layer	TSM 6700G

Molding of Plastics

Shrinkage from Mold Dimensions of Molded Plastics	ASTM D955
Molding Impact Test	DVM-14144v4
Molding Retention	MTL 4333
Mold Shrinkage of Injection Molded Thermoplastics	SAE J1639

Odor

Nissan Design Spec - Nozzle-Def	27800-NDS00
Nissan Design Spec - Duct-Vent	27860-NDS00
Light Aging, Friction Resistance, Scratch Resistance	7710Z-S2K-9000
Specification for ISNT Parts (general)	7710Z-SCC-9000
General Spec Inst. Parts	7710Z-SCC-9001
SEPA Spec Inst panel	7710Z-SEP-A010-M1
TPU SKIN Specification for SEPA	7710Z-SEP-A210-M1
SEPA Seamless IP	7710Z-SEP-A810-M1

TEST**TEST METHOD****Odor (cont.)**

SOK Inst panel	7711Z-SOK-A011-M1
Garnish Testing	8420Z-SLJ-0000
Hot Odor Test for Insulation Materials	CPNM-LOS-ST-10-06-07-E
Odor Test	CPNM-MOS-ST-10-04-08-E; FLTM BO 131-01; LP 463KC-09-01
Air Register Life Cycle	DVM 0041-IP
Cup Holder Life Cycle	DVM-0004-IP
Garnish Assembly	DWG 74300-ASJCA-A020
Mechanical Shock & Drop Test	ES-6L2T-14540-AB, 5.31
Lock Assembly Durability	ES-84510
Decorative Chromium Plating - Copper, Nickel, Chromium Type	GM 4372M; GM 4373M; GM 4374M
Performance Requirements for Exterior Plastic Parts	GM 7452M; GM 7452M
Interior Part Finish Durability	GM N 10083
General Specification for Electrical/Electronic Component Analytical/Development/Validation (A/D/V)	
Procedures for Conformance to Vehicle Environmental, Reliability, and Performance Requirements	GM W 3172
Test Method for Connectors	HES D 3127
Chipping Resistance	HES D 6500
Hood Latch Ajar Switch Specifications	ICS 000007601 07 GMX001
Side Door Module System	ICS Z10296-E00 U222/228 and 354
Lightbar	ICS Z10432 HB
Power Cinch & Power Quick Release Liftgate Latch System	ICS Z10450 GMT920/930
Cargo Door Latches & Strikers	ICS Z10463 ND
Air Register Operating Efforts	IP-0115
Plasticized Polyvinyl Chloride Compounds	JIS K6723
General Motors Lambda System Test Specification	MCS E.S.000003970-02
Material Standard, Vinyl for Automobiles	MES MN 401D
Test method for Fabrics, Carpets...	MES MN 405
Instrument panel common standard	MES PA 55000B
Automobiles Parts Standard, Decoration Film (for Interior)	MES PA 55219A
Crash Pads	MES PA 60350C
Glove Lid Assy	MES PA 64030B
Automobiles Parts Standard, Consoles	MES PA 64390A
Automobiles Parts Standard, Ashtrays	MES PA 64610C
Interior/Exterior Plastic Parts for Decoration	MES PW PT001C; MES PW PT001E; MES PW PT001E
Altitude Test	MIL-STD-810F-500.4
Constant Acceleration	MIL-STD-883E-2001.2
Mechanical Shock	MIL-STD-883E-2002.3
Vibration- Variable Frequency	MIL-STD-883E-2007.3
Odor Testing	MS-300-34; TSM-6709G-4
Washer system windshield	PF-10563
Air Leakage	PF-10799 Sec 4.4
Open/Close Life Cycling	PF-10915, 5.1

TEST**TEST METHOD****Odor (cont.)**

Life Cycle Test	PF-11014, 7.2
Integral/Modular Door Latch & Power Door Actuator	PF-8684-A
Door Inside handle Specifications	PF8926
Door Inside Handle and lock knob assemblies plus all appliques (bezels) and individual locking controls	PF-8926
Door Inside handle and lock Knob Assy ...	PF-8926
Hot Odor Test for Insulation Material	SAE J1351
Reclining/Rearward Folding Seat Back Life Cycle	ST-0051
Resonance point test	TSE 2512G
Test Method for Material Properties of Plastic Instrument Panel Assemblies	TSF 7350G
Performance Test	TSF 7358G
Durability Test	TSF 7359G
Test Method for Door trim Material Characteristics	TSF 7754 G
Package tray Trim Cover Materials	TSL 3607G
Odor	TSM 0505G
Engineering spec. A/C Duct	VE-3W1H-19893-AA
Staining, Odor Test	WSB-M2D402-A3
Inside Door handle Specifications	Z10419 (08/20/02)

Operational

Squeak and Rattle	DVM 0002-IP
Operation Efforts	IP-0022
Operational Durability	MES PA 64410C
Durability Test Method for Console Compartment Door	
Opening and Closing	TSF 7356G
Overload Test Method for Console Compartment Door	TSF 7357G
Operational Travel, Load, Abuse, River Push Out	Z10419 (08/20/02)

Paints

Consistency of Paints Using The Stormer Viscometer	ASTM D562
Blistering of Paints Standard Test Method for Evaluating Degree of:	ASTM D714
Water Resistance Test for Exterior paint	DVM-0026-PA
Exterior paint System Chip Resistance - Grit Blast Method	DVM-0039-PA
Exterior paint System Chip Resistance- Gravelometer Method	DVM-0040-PA
Exterior Paint Acid Etch Resistance	DVM-5861
Quality of TPU plastic exterior brilliant Flexible Paint	DWG 096Z-S5N-C000
Water Immersion Test for Painted Panels and Parts	FLTM BI 104-01
Paint Adhesion Test	FLTM BI 106-01
Measurement of the Gloss of Paint Panels	FLTM BI 110-01
Thickness Measurement of Paint Films	FLTM BI 117-01
Resistance to Abrasion-Taber Abraser	FLTM BN 108-02
Resistance to Scuffing	FLTM BN 108-04

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TEST**TEST METHOD****Paints (cont.)**

Colorfastness to Crocking	GM 9033P
Tape Adhesion Test for Paint Panels	GM 9071P
Scuff and Mar Resistance	GM 9150P
Dime Scrape Test for Paint Adhesion and Brittleness	GM 9506P
Thumbnail Test for Paint Parts	GM 9507P
Taber Abraser Method	GM 9515P
Cleaning/Solvent Resistance	GM 9900P
Scuff Resistance Test for Painted Plastics	GM 9911P
Paint Finishes Test Method for:	ISC-E00-006
Cycle Testing of Painted Surfaces	LP 463B-22-01
Cycle Crack Resistance	LP 463PB-22-01
Fluid Immersion Test	LP 463TB-13-01
Paint Film	MES MN 600H
Paint Film Test Method for:	MES MN601
Paint Testing	MS-PD-48-1
Automotive Paint Testing Method for:	NES M 0007
Test Method for Print Resistance of Paint Film	TSH 1501G
Test Method for Adhesive Property of Paint Film	TSH 1503G
Test Method for Flexibility of Paint Film	TSH 1504G
Test Method for Water Resistance of Paint film	TSH 1505G
Test Method for Volatile Solvent Resistance of Paint film	TSH 1508G
Test Method for Chemical Resistance of Paint Film	TSH 1509G
Test Method for Gloss of Paint Film	TSH 1519G
Paint Film Protection Wax Films Test Methods for:	TSH 1901G
Paint Performance, Rigid Substrates, exterior	WSS-M2P180-A
Paint Performance, Flexible Substrates, exterior	WSS-M2P181-A

Peel Strength

Peel of Stripping Strength of Adhesive Bonds	ASTM D903
Peel Adhesion of Pressure Sensitive Tapes	FLTM BU 112-02
90° Peel Test	FLTM BU-112-02
Peel Test	GM 3608M; GM 9838P
Cleavage Peel Test	GM 9797P
Determination of Peel Strength and Adhesion	LP 463TB-3-01
Peel Strength of Soft Trim Materials	SAE J1679

Polyethylene Films

Polyethylene-Methods of Test	ISO 7214
Polyethylene Films	TSM 7500G

Reinforced Plastics

Test Method for Ignition Loss of Cured Reinforced Resins	ASTM D2584
Glass Content of Reinforced Plastics Test for:	GM 9077P
Curing With MEK	GM 9509P

TEST**TEST METHOD****Reinforced Plastics (cont.)**

Glass fiber reinforcement	ISO 3451
Mineral Filter Content	ISO 3451-1
Cure Test Using MEK	LP 463PB-07-01
Resin Content	TI 134

Rubber

Test Method for Initial Tear Resistance of Plastic Film and Sheeting	ASTM D1004
Rubber Insulating Line Hose Specification for:	ASTM D1050
Rubber Deterioration-Surface Ozone Cracking in a Chamber Test	ASTM D1149
Test Method for Rubber - Compression Set at Low Temperatures	ASTM D1229
Test Method for Rubber Property-Durometer Hardness	ASTM D2240
Infrared Spectrophotometry Rubber-Identification by:	ASTM D3677
Rubber Hose Standard Test Method for:	ASTM D380
Test Methods for Rubber Property Compression Set	ASTM D395
Rubber Properties In Tension Test Methods for:	ASTM D412
Test Method for Rubber Property Effect of Liquids	ASTM D471
Rubber Deterioration-Surface Cracking Test Method for:	ASTM D518
Rubber Deterioration in Air Oven Test Method for:	ASTM D573
Rubber Properties in Compression	ASTM D575
Test Method for Rubber Property - Tear Resistance	ASTM D624
Rubber Properties in Compression or Shear	ASTM D945
General Techniques for Infrared Quantitative Analysis	ASTM E168
Trapezoid Tear Strength	FLTM BN 022-01
Tear Characteristics of Vacuum Forming Material	GM 9168P
Determination of Tear Strength	ISO 8067
Rubber, Vulcanized - Determination of Low-Temperature Brittleness	ISO 812
Physical testing methods for Vulcanized Rubber	JIS K6301
Tear Resistance-Cellular Elastomeric Materials	LP 463AB-7-02

Salt Spray Testing

Method of Salt Spray (Fog) Testing	ASTM B117
Salt Spray Exposure	DVM -0002-BM
Simulated Corrosion Lifetime – Salt Spray	DVM-0002
Exterior Lighting DVM: Salt Spray	DVM-0014-EX
Salt Spray Resistance for Painted Panels and Parts	FLTM BI 103-01
Salt Spray (Mist) Test	GM 4298P
Test Ka: Salt Mis	IEC 68-2-11
Test Kb: Salt Mist, Cyclic (Sodium Chloride Solution)	IEC 68-2-52
Salt Spray Resistance to:	JIS Z2371
Salt Spray Test	LP 416H-45; LP 463PB-10-01
Salt Spray (Corrosion)	MIL-STD202F-101D
Salt Fog	MIL-STD-810F-509.4

TEST**TEST METHOD****Salt Spray Testing (cont.)**

Salt Spray Testing
Test Method of Salt Spray

NES M0140
TSH 1552G

Scratch, Scuff & Mar Resistance

Exterior Paint System- Mar & Scratch
Mar Resistance for Exterior Part
Scratch Resistance for Exterior Paint
Five Finger Scratch Resistance
Resistance to Scratching
Scratch Resistance - 5 Finger Scratch Test
Scratch Resistance
Scratch and Mar Resistance of Plastics, Five Arm Test
Mar and Scuff Resistance - 5 Finger Scratch Tester
Crock Mar Resistance
Cut Through Resistance
Resistance to Scuffing
Scratch Test Pencil
Nail Scratch Resistance

DVM -0034 PA; DVM -0035 PA
DVM-0034-PA
DVM-0035-PA
FLTM BN 108-03
FLTM BN 108-13
FLTM BN 108-13
FLTM-108-13
GM N 3943
LP 463DD-18-01
LP 463PB-54-01
SAE J1128
SAE J365
TSH 1539G
TSH 1544G

Seals

Seal Quality Acid Dissolution Test
Sealability of Gasket Materials
Plastic, Cellular, Molded PU High Resilience Seal
Applications

ASTM B680
ASTM F37
MS-DC634

Stain Resistance

Stain Resistance-Road Asphalt
Stain Resistance
Staining of Surfaces (Contact, Migration and Diffusion)
Exterior Paint System Fluid Resistance
Road Asphalt Stain Resistance
Stain & Mildew resistance
Bleeding, erspiration
Water and Soap Spotting Test for Paint
Resistance to Acid Spotting
Synthetic Perspiration Resistance to:
Soiling and cleanability for interor trim material
Determination of Fuel Resistance of Plastic Parts
Staining of Surface by Polymers and Elastomers
Hydrogen Sulfide Staining Resistance
Water spotting
Staining resistance
Staining Test
Sulfide Staining Resistance to

27881-SDS
ASTM 9214P
ASTM D925
DVM 0037-PA
DVM-27881
ESB-M17H158-A
FLTM AN 101-01
FLTM BI 113-01
FLTM BI 113-02
FLTM BI 113-03
FLTM BN 112-08
FLTM BO 101-05
FLTM BP 153-01
GM 9069P
GM 9133P
GM 9172P
GM 9689P
GM 9736P

TEST**TEST METHOD****Stain Resistance (cont.)**

Resistance to Sunscreen	GM N 10033
Soil and Cleaner resistance of Automotive Materials	GM W 3402
Staining of Soft Trim Materials	LP 463CB-14-01
Resistance to water spotting	LP 463KC-03-01B
Soil resistance	LP 463KC-04-01-A
Contact Staining	MS-DC-648
Clouding Test	NES M7083
Suntan Lotion Resistance	TM-GEN-022B

Tensile

Elongation grab method	ASTM 5034
Tensile Strength	ASTM D1117; ASTM D5733; JIS K6301
Tensile Properties of Plastics by Use of Microtensile Specimens	ASTM D1708
Tensile-Impact Energy to Break Plastics and Electrical Insulating Material	ASTM D1822
Tear Strength	ASTM D2261
Tensile, Compression, and Flexural Creep and Creep-Rupture of Plastics	ASTM D2990
Breaking Strength	ASTM D5034
Test Method for Tensile Properties of Plastics	ASTM D638
Test Methods for Tensile Properties of Thin Plastic Sheeting	ASTM D882
Tension Testing of Nonmetallic Gasket Materials	ASTM F152
Tensile Adhesion, pluck test	DVM -18401
Determination of Tensile Strength and Elongation at Break	ISO 1798
Determination of Tensile Properties of Rigid Materials	ISO 1926
Plastics - Determination of Tensile Properties	ISO 527-1/2
Determination of Tensile Properties	ISO R527
Rubber, Vulcanized or Thermoplastic - Determination of Tensile Stress - Strain Properties	JIS K6251
Rubber, Vulcanized or Thermoplastic - Determination of Tear Strength	JIS K6252
Tensile-Shear Adhesion	LP 463CB-8-01
Tensile Shear Adhesion of Sealers	LP 463NB-17-01
Determination of Tensile Strength	LP 463TB-4-01
Passive Sphere Tension Test	TP-10110

Thermal Testing

Thermal Oxidative Stability of Propylene Plastics, Using a Biaxial Rotator	ASTM D3012
Coefficient of Linear Thermal Expansion	ASTM D696
Performance (Thermal Cycling) for Plastic Parts	DVM-0004-RG
Thermocycle	DVM-0004-RG v5

TEST**TEST METHOD****Thermal Testing (cont.)**

Thermal Shock	DVM-0019-OR; FLTM BI 107-05; GM 4497M; GM 9525P; MIL-STD202-107; MIL-STD-883E-10119
Thermal Cycling	DVM-004-RG
Thermal Insulation Performance	GM 9202P
Ice Freeze Resistance	LP 463AB-53-01
High Temperature Test	MIL STD 810F-501.4
Low Temperature Test	MIL STD 810F-502.4; MIL-STD-810E-502.3
Temperature Cycling	MIL-STD-883E-1010.7
Thermal Cycle Test Method for Plastic Parts	NES M0132
Short term heat, humidity & cold	WSS-M2P188-A1 3.6.8.2

Vibration

Vibration	65840NDS00; ANSI C136.31-2001; ES-6L2T-14540-AB, 5.55; MIL-STD-202-201; MIL-STD-810E; MIL-STD-810F-514.5
Vibration Durability	7412Z-S9V-A010-M1
Vibration Testing	Bellcore GR-63-CORE; PF-10817; PF-8684
Air Register Movement Under Vibration	DVM 0001-IP
Air Register Movement Under Vibration	DVM 0019-IP
Vibration, BSR	DWG MA851317 (Mitsubishi)
Vibration Test	ES000003970-02
Intier Closure Specification - Vibration Test	ICS 000005173
Test Fd: Random Vibration Wide Band -Reproducibility High	IEC 68-2-34
Test Fc: Vibration (Sinusoidal)	IEC 68-2-6
Test Fh: Vibration, Broadband Random (digital Control) and Guidance	IEC 68-2-64
Vibration Endurance	JIS D1601
Acoustic Noise	MIL-STD-810F-515.5
Shock	MIL-STD-810F-516.5
Instrument Panel Component & System Buzz, Squeak, and Rattle/Vibration Requirements	PF-8243
Intier Specified Vibration Testing	Z10270 G00; Z10296-E00
Intier Closure Specification - Vibration Test	Z10365-C00; Z10450; Z10463

Viscosity

Viscosity of Plastisols and Organosols at Low Shear Rates by Brookfield Viscometer	ASTM D1824
Viscosity, Melting Point, and Moisture Content of Polyamide (PA)	ASTM D789

TEST**TEST METHOD****Water Immersion & Absorption**

Water Absorption	ASTM C272
Water Absorption of Rigid Cellular Plastics	ASTM D2842
Water Resistance Using Controlled Condensation	ASTM D4585
Water Absorption of Plastics	ASTM D570
Water Immersion	ASTM D870
Light and Water Exposure of Nonmetallic Materials	ASTM G53
Condensing Water Vapor Test	FLTM BI 1104-02
Water Immersion Test for Painted Panels and Parts	FLTM BI 160-01
Protection against water	IEC 60592
Determination of Water Absorption	ISO 2896
Water Immersion Test for Painted Panels	LP 463PB-45-01
Moisture Resistance	MIL-STD-202F-106; MIL-STD-883E-1004

Metallic Ores and Products (All Forms, Articles of Metal)

Method for Evaluating the Microstructure of Graphite in Iron Castings	ASTM A247
Test Methods and Definitions for Mechanical Testing of Steel Products	ASTM A370
Guide for defining and Rating the Microstructure of High Carbon Bearing Steels	ASTM A892
Test Method for Weight of Coating of Zinc Coated Galvanized Iron and Steel Articles	ASTM A90
Standard Test Method for High Speed Puncture Properties of Plastics Using Load and Displacement	ASTM D3763-02
Test Method for Estimating the Depth of Decarburization of Steel Specimens	ASTM E1077
Methods for Determining Average Grain Size	ASTM E112
Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials	ASTM E18
Practice for Determining the Inclusion Content of Steel	ASTM E45
Test Methods of Tension Testing of Metallic Materials	ASTM E8
Methods of Estimating the Largest Grain Observed in a Metallographic Section (ALA Grain Size)	ASTM E930
Chromate Conversion Coatings on Zinc, Cadmium, Aluminum-Zinc Alloys and Zinc-aluminum Alloys Test Methods	ISO 3613
Methods for Measuring Decarburization in Ferrous Materials	LP 471A-2
Methods of Measuring Case Depth of Surface Hardened Steel and Iron	LP 471A-3
Estimating Average Grain Size of Materials	LP 471A-4
Hot-Rolled Carbon Steel Sheets and Strip	MES MM 100A
Cold-Rolled High Tensile Strength Steel Plates, Sheets and Strip	MES MM 106A
Grain Size	SAE J1268

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

SCI-LAB MATERIALS TESTING INC.
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Kitchener, ON, CANADA
Richard Isaacs Phone: 519 895 0500

ELECTRICAL

Valid To: October 31, 2008

Certificate Number: 2743.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following types of tests on **Components and Assemblies (Wiring and Related Products)**:

TEST

TEST METHOD

D-C Resistance or Conductance of Insulating Materials	ASTM D257
ESD Immunity Testing	EN 61000-4-2
Tests A: Cold	IEC 68-2-1
Test N: Change of Temperature	IEC 68-2-14
Test R and Guidance: Water	IEC 68-2-18
Tests B: Dry Heat	IEC 68-2-2
Test Ea and Guidance: Shock	IEC 68-2-27
Guidance for Damp Heat Tests	IEC 68-2-28
Test Eb and Guidance: Bump	IEC 68-2-29
Test Ca: Damp Heat, Steady State	IEC 68-2-3
Test Db and Guidance: Damp heat Cyclic (12+12-hour cycle)	IEC 68-2-30
Test Ed: Free Fall	IEC 68-2-32
Test Kc: Sulfur Dioxide Test for Contacts and Connections	IEC 68-2-42
Test Kd: Hydrogen Sulfide Test for Contacts and Connections	IEC 68-2-43
Test Sa: Simulated Solar Radiation at Ground Level	IEC 68-2-5
Test Cb: Damp Heat, Steady State, Primarily for Equipment	IEC 68-2-56
Test L: Dust and Sand	IEC 68-2-68
Test Ga and Guidance: Acceleration, Steady State	IEC 68-2-7
Insulation resistance	MIL STD 202 Meth. 302
Insulation Resistance	MIL STD 202-302
Dielectric Withstand Voltage	MIL-STD 202-301
DC Resistance	MIL-STD 202-303

TEST

Insulation Resistance
Joint SAE/TMC Recommended Environmental
Practices for Electronic Equipment Design
Dust Exposure
Crimp Connections

TEST METHOD

MIL-STD-202-302
SAE J1455
SAE J726
VW 603 30