SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

MICHIGAN TESTING INSTITUTE, INC.
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MECHANICAL

Valid To: August 31, 2019 Certificate Number: 0414.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on paints, organic coatings, clear and pigmented organic finishes, primed metallic substrates, organic coatings on metals, coated steel, automotive trim parts, decorative interior plastic parts, non-decorative powder coatings, polyvinyl chloride coated fabrics, polyvinyl chloride sheets, soft interior trim parts, soft vinyl chloride sheets, trim panels, textiles, plastic substrates, flexible cellular plastics, vinyl, and leather:

Test	**Standard**
Abrasion	ASTM D3884, D4060, D968, D2486; DSM ESX-60210 (4.8), ESX-60261 (3.10), ESX-60523 (4.18), ESX-83217 (4.19), ESX-83220 (4.11); FIAT 50488/02; FORD FLTM BN108-02, FLTM BN108-04; FTM 141C (Method 6192.1); GM 9515P *(*Inactive 6/13*); GMW 3208, 14125, 15487; NISSAN NES M0136; SAE J365, J1530 (3, 4), J1847, J948 (3)
Adhesion and Peel Strength	ASTM B571, B533, D751 (45-48), D413 (Machine Method), D903, D3359; FIAT CHRYSLER FCA 50461; FORD ESB-M11P8-A, FLTM BI106-01; GM 3602M (3.4, 3.5) *(*Inactive 8/10*), 3608M (4.1, 4.2, 4.3) *(*Inactive 8/10*), 3611M *(*Inactive 5/11*), 3622M (4.3) *(*Inactive12/10*), 9071P *(*Inactive 9/12*), 9160P *(*Inactive 6/15*), 9502P *(*Inactive 8/12*); GMW 14892, 14829, 16005, 16443; ISO 8510-2, 2409
Alkaline Acid Resistance	DSM ESX-71227 (4.7); MAZDA MES MN601 (16)
Appearance	FORD FLTM BI109-01; GM 4383M (3.2.2.1) *(*Inactive 12/10*)

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Test	Standard
Ash	ASTM D1278 (Part 14), D2584, D5630 (Method B); ISO 1172, 3451-1 (Method A)
Blistering Evaluation	ASTM D714
Breaking Strength	ASTM D751 (Procedure A-Grab Test Method), (Procedure B-Cut Strip Method)
Car Wash Simulation/Grained Surface Cleanability	GM 9600P, 9688P; GMW 14865
Checking Evaluation	ASTM D660
Chip Resistance (Gravel)	ASTM D3170; FORD FLTM BI157-06; GM 9508P *(*Inactive 8/10*); GMW 14700; MAZDA MES MN601 (29); SAE J400
Cleaning/Solvent Resistance	ASTM D1308; CHRYSLER 463KC-4-01, 463PB-31-01, 463PB-57-03; DSM ESX-60210 (4.8), ESX-60211 (4.7), ESX-60261 (3.9), ESX-71227 (4.9), ESX-83244 (3.9); GM 4383M (3.2.3.3.2) *(*Inactive 12/10*), 7400M (3.2.3.1.5) *(*Inactive 12/13*), 7453M (6.2) *(*Inactive 3/11*), 9126P *(*Inactive 4/12*), 9509P *(*Inactive 10/12*), 9533P (2, 3) *(*Inactive 11/09*), 9900P *(*Inactive 3/10*); GMW 3402, 14334, 14867 (3.3, 3.6), 14701 (2, 3), 15891, 15725 (4.7); NISSAN NES M0133 (Methods 1-4)
Coating Thickness	ASTM B499, D6132, D7091; ISO 2808 (Methods 6 and 7); FLTM BI117-01
Color	ASTM E1331; FORD FLTM BI109-01; GM 7400M (3.2.3.1.4), GM 9131P; SAE J1545, J1767
Color Crocking/Mar Resistance	AATCC Method 8; CHRYSLER 463PB-54-01; FORD FLTM BN107-01, FLTM BN108-10, FLTM BI 161-01; GM 9033P *(*Inactive 7/13*); ISO 105-X12; SAE J861
Color Transfer	GM9137P
Conical Bend Test	ASTM D522 (Method A)

Test	Standard
Condensing Water Vapor	FORD FLTM BI 104-02
Corrosion and Corrosion Creepback	ASTM D1654, D6899; CS-CORROSION (*Section 4 only)* (Component Level); FORD FLTM BI123-03, FLTM BI123-01; CETP:00.00-L-467; GM 9102P *(*Inactive 12/10*), 9511P *(*Inactive 12/10*), 9540P *(*Inactive 3/10*); GMW 3286, 14872, 15282, 15288; ISO 9227 (5.2); ISO 11997-1; NISSAN NES M0158; SAE J1389; SAE J2334; SAE J2721; TOYOTA TSH1555G (A)
Dead Load Seam Strength	ASTM D751 (80-83)
Detergent Resistance	ASTM D2248
Determination of Water Spotting	GMW 14102
Determining Fiber Degradation of Automotive Textiles	GM 9771P; GMW 3387
Determining the Cohesive Strengths of Felts and Similar Materials	GMW 14695
Dime Scrape Test	GM 9506P *(*Inactive 6/13*)
Dimension and Mass	ASTM D751 (7-11)
Dimensional Stability	DSM ESX-62310 (4.4), ESX-83220 (4.17); FORD FLTM BN105-03; GM 7400M (3.2.3.1.7), 7451M (3.6), 7452M (3.5), 9452P; GMW 4217
Durometer Hardness (Shore A and D)	ASTM D2240
Dust – Out	GM9635P *(*Inactive 6/13*); GMW 16998
Elongation	ASTM D751 (17)
Environmental Cycle Temperature: (-40 to 250) °C Humidity: (40 to 95) %RH	ASTM D2126; BMW TP 303.4; CHRYSLER 463LB-12-01 (A and B), 463PB-22-01; DSM ESX-60210 (4.3.1, 4.3.2), ESX-60211 (4.3), ESX-60256 (3.1), ESX-60261 (3.2), ESX-62310 (4.8), ESX-83215 (3.4), ESX-83244 (3.3, 3.4, 3.5); FCA 50184; FORD FLTM BQ104-07 (*Except 7-9, 16-18*); GM 3628M (3.3.6) *(*Inactive 3/11*), 4383M (3.2.3.1) *(*Inactive 12/10*), 9200P (4.1), 9505P *(*Inactive 12/10*); GMW 14124 (*Except Cycle T*), 14650 (4.3), 15725 (4.3); MAZDA MES MN601 (12), MES PWPT001A (7.6); MERCEDES DBL 9202 (4.1.2); NISSAN NES M0132

Test	**Standard**
Environmental Cycle (*cont'd*) Temperature: (-40 to 250) °C Humidity: (40 to 95) %RH	SAE J2100; TOYOTA TSF7754G (5.2)
Fabric:	
Warp and Filling Count	ASTM D3775;
Mass Per Unit Area	ASTM D3776 (*Except A*);
Width of Textile Fabrics	ASTM D3774
Filliform Corrosion Resistance	ASTM D2803
Film Hardness	ASTM D3363; ISO 15184; FIAT CHRYSLER FCA 50452/02; MAZDA MES MN601 (9)
Film Thickness	ASTM D7091; ISO 2808 (Methods 6 & 7)
Flaking Evaluation	ASTM D772
Flammability	ASTM D350 (B); BMW GS 97038; CMVSS 302; CHRYSLER MSJP 9-4 (Steam and Burn); FIAT CHRYSLER CP-508A; CP-5237LA; DIN 75200; DSM ESX-60410, ESX-62101 (4.10), ESX-83220 (4.24); DOT TP-302-03; FMVSS 302; FORD ES-E97B-1011014-AA; EU BN 024-02; GB 8410; GM 9070P *(*Inactive 9/11*); GMW 3232; HONDA HES C206, HES D6003; ISO 3795; KMVSS 302; MAZDA MES PWPT001A (7.10); MS 300-8; NISSAN NES0094; PV 3904; SAE J369; TL 1010; TOYOTA TSF7754G (5.12); TSM 0500G; VOLVO VCS5031.19; VSTD 19-1
Flexural Properties	ASTM D790, D1184, D6272; ISO 178, 6272-2

Test	**Standard**
Fluorescent UV Exposure (QUV)	ASTM D4329, G53:1995, G154; SAE J2020
Foam Laminate Curl Test	GM 9330P *(*Inactive 9/12*); GMW 4089
Fogging	FORD FLTM BO116-03; GM 9305P; GMW 3235; SAE J1756; TOYOTA TSM0503G Method B
Fuel Resistance	DSM ESX-62310 (4.12), ESX-71227 (4.8); GM 9500P *(*Inactive 8/10*), 9501P *(*Inactive 8/10*), 9659P *(*Inactive 12/10*); GMW 14650 (4.7), 14333, 17137; MAZDA MES MN601 (18, 20)
Gloss	ASTM D523; FIAT CHRYSLER FCA 50457; ISO 2813
Grain Retention of Interior Trim Materials	GM 9142P
Haze	ASTM D4039
Humidity	ASTM D1735, D2247; DIN 50017 (*Constant Atmosphere only*); DSM ESX-71227 (4.4), ESX-83215 (3.3); GM 2617M (3.4.2.9) *(*Inactive 3/08*), 4465P *(*Inactive 1/11*), 2210M (3.3.1.1, 3.3.1.2); GMW 14729, 14650 (4.4); ISO 6270-02; MERCEDES DBL 9202 (4.1.3); TOYOTA TSF7754G (5.7)
Impact	ASTM D5420; CHRYSLER 463LB-11-01-C; DSM ESX-60210 (4.11), ESX-62310 (4.7), ESX-83244 (3.10); FORD FLTM BO151-01; GM 9032P *(*Inactive 6/10*), 9140P *(*Inactive 3/12*), 9302P *(*Inactive 3/14*); GMW 14093 (Apparatus A); ISO 6272-2; MAZDA MES MN601 (33); NISSAN NES M0134; TOYOTA TSF7754G (5.3)
Interior Trim Hand Peel Strength	GM 9907P *(*Inactive 03/01/11*)
Irradiation Heat Resistance	DSM ESX-83215 (3.1); GM 9310P; GMW 15432; TOYOTA TSF7754G (5.1)

Test	Standard
Laminate Bond Strength	GMW 3220
Laminate Softening Point	DSM ESX-83220 (4.23.2)
Mandrel Bend	ASTM D522 (Method B); GM 3628M (3.6) *(*Inactive 3/11*), 7400M (3.2.3.1.3) *(*Inactive 3/11*), 9503P *(*Inactive 6/12*); GMW 16746, 14108; MAZDA MES MN601 (31); SAE J323
Mass Per Area	GMW3182
Melt Flow Rate	ASTM D1238; ISO 1133
Mildew Growth	FORD WSS-M5H34-A (3.12); GM 9128P *(*Inactive 4/11*); GMW 3259
Odor	CHRYSLER 463KC-09-01; DSM ESX-62101 (4.9), ESX-83217 (4.5), ESX-83220 (4.22); FORD FLTM BO 131-01, -03; GM 9130P *(*Inactive 6/15*), 9832P *(*Inactive 2/12*); GMW 3205; MS 300-34; SAE J1351; TOYOTA TSM 0505G (*Except 8.3*); Volkswagen VDA 270; Volkswagen AG PV3900
Oil Immersion Test	GM 4350M (Appendix B) *(*Inactive 12/13*)
Orange Peel Measurement	GMW 15777 Section 3.2.2
Oven Aging Temperature: (38 to 250) °C	ASTM D751 (72-79); Chrysler 463LB-13-01; DSM ESX-60210 (4.4), ESX-60261 (3.15), ESX-60359 (4.9), ESX-60523 (4.16), ESX-62101 (4.8), ESX-62310 (4.9); FORD FLTM BN113-02, WSB-15P40-A (3.11), WSK-M98P5-A (3.6); GM 2210M (3.3.1.1), 3628M (3.15) *(*Inactive 03/11*), 7452M (3.4) *(*Inactive 12/13*), 7453M (5.2)* (*Inactive 03/11/11*), 9504P* (*Inactive 05/01/11*); GMW 14867 (3.9), 14650 (4.2), 15725 (4.5); MAZDA MES MN601 (11), MES PWPT001A (7.3, 7.4); MERCEDES DBL 9202 (4.1.1); TOYOTA TSF7754G (5.6); Volkswagen VW 44045 (5.14)
Parting Line	GM9684P *(*Inactive 10/12*); GMW 15424

Test	Standard
Performance Specification for Cable-to-Terminal Electrical Crimps	SAE/USCAR-21, Except 4.5.5
Perspiration Resistance	Chrysler 463KC-21-01; FORD FLTM BI 113-07; GM 9240P; GMW 14296
Pile Distortion	GMW 4141
Pliability	GM 9664P
Print Resistance	MAZDA MES MN601 (10)
Puckering Resistance	TOYOTA TSF7754G (5.11)
Resistance to Cold Crack of Folded Materials	GMW 14126
Resistance to Loop Pull-out of Floor Carpet	GMW 14148
Resistance to Water and Soap Spotting	FORD FLTM BI113-01
Resistance to Water Wicking	ASTM D751, 94-98; SAE J913
Sag Test	GM 3628M (3.8) *(*Inactive 3/11*)
Salt Spray	ASTM B117; DIN 50021 (*Salt Spray only*); DSM ESX-71227 (4.5); GM 4298P *(*Inactive 12/10*); GMW 3286; ISO 9227; NISSAN NES M0140; TSH1552G, TSC0511G, Section 6.12; JIS Z2371
Scratch Resistance of Organic Coatings – Simulation of Car Wash Installations	GMW 14865
Scratch Resistance of Organic Coatings and Self Adhesive Foils	GMW 14698

Test	Standard
Scuff and Mar	CHRYSLER 463DD-18-01, LLC 463DD-18-02; DSM ESX-60210 (4.9); FORD FLTM BN108-13; GM 4367M (3.3.7), 9150P; GMN 3943; GMW 14130, 14688
Scuffing	FORD FLTM BN108-04
Shift Strength	DSM ESX-83220 (4.10)
Shrinkage	DSM ESX-60523 (4.7), ESX-83217 (4.15.1), ESX-83220 (4.13); GM 3628M (3.10) *(*Inactive 3/11*); SAE J883
Soil Resistance	CHRYSLER 463KC-4-01; DSM ESX-60261 (3.17), ESX-60411 (3.3), ESX-83217 (4.25); FORD FLTM BN112-08
Specific Gravity	ASTM D792 (Method A)
Stain	ASTM D925 (Method A); DSM ESX-60523 (4.11), ESX-83217 (4.13); FORD FLTM BN103-01; GM 9141P; GMW 14864, GM 14132; SAE J912
Stain Resistance to Identification Markings	FORD FLTM BO112-06
Standard Atmosphere	DIN 50014 (Class 2)
Standard Conditioning of Organic Material	GMW 3221
Static Shear Test	GM 3608M (3.3) *(*Inactive 3/10*)
Stiffness Testing	ASTM D1388 (Option A), D5732; DIN 53362; GMW 3390; ISO 9073-7
Stretch and Set	GMW 3211; SAE J855
Sunscreen Lotion/Insect Repellent	FORD FLTM BI 113-08; GMW 14445
Tear Resistance	ASTM D624, D1004, D3574 (Test F); DSM ESX-60523 (4.6), ESX-83217 (4.9), ESX-83220 (4.7); ISO 13937-2

Test	**Standard**
Tear Strength	ASTM D751 (16) (Procedure B - Tongue Tear Method)
Tensile Properties	ASTM D638, D952, D1708, D5034, D5733, D1876, D5587; CHRYSLER 463LB-10-01; DSM ESX-60256 (3.3), ESX-60359 (4.2), ESX-60523 (4.4, 4.5), ESX-83217 (4.6, 4.8, 4.10), ESX-83220 (4.4.1, 4.5, 4.23.1); FORD ESB-M11P8-A, ESF-3LE8A080-AA (IIIE), FLTM BN113-01, FLTM BO113-03; GMW 14695, 3326, 3010; ISO 527-1, -2, 34-1, 9073-18; TOYOTA TSF7754G (5.8)
Thermal-Oxidative Stability Characteristics of Plastics	ASTM D3012; GM 9059P *(*Inactive 06/11*); GMW 15725, 4.4; ISO 4577
Thermal Shock for Coating Adhesion	FLTM BI 107-05; 463PB-64-01; GMW 15919; GM 9525P *(*Inactive 04/14*)
Thickness	ASTM B487; ISO 2808 (Method 5), 9037
Thickness of Plastic Sheet – Weight Method	FORD FLTM EU BN050-07
Thickness Test for Padding Materials	FORD FLTM BN023-02
Thumbnail Hardness Test	GM 9507P
Topcoat Materials Exterior (Yellowing)	GM 4367M (3.3.15) *(*Inactive 08/01/2010*); GMW 15433 Section 4.3
Trapezoidal Tear	ASTM D751 (32-35)
Vibration Testing (-40 to 150) °C (5 to 200) Hz 6600 lbf	FIAT 9.90111/02; Ford ES-9L3T-14540-AA, ES-BR3E-6A949-AA, ES-FR3E-6A949-AA, ES-FC44-8146-AA, ES-CM5E-6A949-AA; SAE J1455; USCAR 20; Volkswagen VW80101, VW80000
Visual Color Difference Evaluation with a Gray Scale	AATCC Procedure 1; ASTM D2616; ISO 105-A02
Visual Evaluations	ASTM D610; GMW 15356, 15357, 15358, 15359; ISO 105-A03

Test	Standard
Water Immersion	ASTM D870; DSM ESX-60211 (4.6), ESX-71227 (4.3), ESX-83220 (4.12), ESX-83244 (3.8); FCA 50470; FORD FLTM BI104-01; GM 3628M (3.12) *(*Inactive 03/11*), 9514P *(*Inactive 03/11*); MAZDA MES MN601 (13)
Water Jet Tests for Painted Parts	FORD FLTM BO160-04; GM 9531P (Method B); GMW 14797 (Table A1A), 15745
Weight	DSM ESX-60523 (4.3), ESX-62310 (4.3), ESX-83217 (4.1), ESX-83220 (4.2.1); GM 9337P; GMW 3182; SAE J860
Xenon Exposure	ASTM G155; FORD FLTM BN117-03; GM 9125P (3.3) *(*Inactive 5/13*); ISO 105-B06; NES M0135 (II); SAE J1885 *(*Withdrawn 1/08*), J1960 *(*Withdrawn 1/08*), J2412, J2527

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

The laboratory is only accredited for the test methods listed above. The accredited test methods are used in determining compliance with the material specifications listed below. The inclusion of these material specifications on this Scope does not confer laboratory accreditation to the material specifications nor does it confer accreditation for the method embedded within the specifications.

GM 2210M, GM 2617M, GMW14838, GMW14867, GMW14444, GMW14650, GMW 15725, PF-7051, MS-PZ-4-1, MS-PZ-5-1, MS-PD-48-1, WSS-M15P34-D

Accredited Laboratory

A2LA has accredited

MICHIGAN TESTING INSTITUTE, INC.

Sterling Heights, MI

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 23rd day of August 2017.

President and CEO
For the Accreditation Council
Certificate Number 0414.01
Valid to August 31, 2019

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