



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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MECHANICAL

Valid To: October 31, 2026

Certificate Number: 5095.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following environmental, mechanical, and non-destructive tests and calibrations:

Test	Test Method(s)
Airbag Deployment Testing (Environmental) (-40 to 95) °C	BMW PR 7 007 983; QS 72013; Daimler A002 005 04 99; VW PV 3546; VW PV 3545; Tesla TM 2550
Temperature & Humidity Cycling (Environmental) (-73 to 190) °C (10 to 95) % RH	ASTM D3574; BMW PR 292 (2017-12 his.); BMW PR 11737558; BMW PR 308 (2006-04 his.); BMW PR 11737574; BMW AA-P 0276 (2006-06); BMW PR 165 (2020-06); BMW PR 11737567; BMW PR 357 (2018-10); BMW PR 11737651; BMW AA.P 275 (2006-05); BMW AA-0026; Ford FLTM BQ 104-07: Method 2; Ford FLTM BO 040-01; Ford FLTM BN 113-02; GMW 14124 Cycles: H, M, N, P, & S; VW PV 1200; VW PV 2005A; VW PV 3959; DBL 5471; DBL 9202 4.1.2 & 4.1.3 (2021-11); DBL 1752; DBL 5416 A.2. 10 (Annex 2); MBN 55555-3 (2019-11), MBN 55555-4 (2019-10), MBN 55555-6 (2018-02); MBN 51000-3, 51000-4, 51000-06; Tesla TP 0000706 Modules 1 & 2

Test**Test Method(s)**

Temperature & Humidity Cycling (Environmental)
(-73 to 190) °C
(10 to 95) % RH (cont'd)

SAE USCAR 21-4 Sec 4.5.2;
SAE USCAR 38 Sec 4.5;
DIN 53377;
DIN 53508
DIN 53497;
VW TL 527;
DIN EN ISO 2440
DIN EN ISO 17130;
DIN ISO 17228;
NISSAN NES M0132;
PSA D47 1165 N, R, W, X;

Heat Resistance

DBL 5306 (2008-12);
MBN 15306-1,
MBN 55555-3 (2019-11);
MBN 51000-3
Volvo STD 423-0055;
PSA D45 1234;

Sun Simulation
(-70 to 174) °C
(10 to 95) % RH

BMW PR 306 (2014-04);
BMW PR 11737571;
DIN 75220;
MIL-STD-810G Method 505.5;
Rivian RTS.0150

Xenon Arc (UV Fluorescent)
(Irradiance: 0.25 W/m¹² to 0.68 W/m¹² @340 nm
20 W/m¹² to 125 W/m¹ @300 – 400 nm)
(BST & BPT Temperature: Up to 120 °C)
(Relative Humidity: Up to 95%)

ASTM D2565 Cycle 1,
ASTM D5071 Cycle 1 & 2;
ASTM G151, ASTM G155 Cycle 1;
DIN EN ISO 4892-1;
DIN EN ISO 4892-2 Table B.2
DIN EN ISO 105-B06 (Exposure condition no. 3),
HLA;
MBN 51000-5 § 5.3 HLA;
SAE J2527;
SAE J2412;
Volvo VCS 1027,359;

Ash Content by Muffle Furnace/High Temp
Exposure
(175 to 1100) °C

ASTM D2584;
ASTM D5630 Method B;
DIN EN ISO 3451-1 Method A

Salt Fog
(25 to 60) °C

ASTM B117;
DIN EN ISO 9227; MIL-STD-810G Method
509.5

CASS
(25 to 70) °C

ASTM B368;
DIN EN ISO 9227



Test**Test Method(s)**

Condensing Humidity
(100 % Relative Humidity)

DIN EN ISO 6270-2;
ASTM D2247

Vibration:
(5 to 4000) Hz
112 g
Stroke 3 in
8 000 lbf
(-73 to 163) °C
(10 to 95) % RH

BMW PR 309 (2016-03);
BMW PR 11737577

Tensile, Compression, & Elongation at Break with
Extensometer
0.05 N to 100 kN

ASTM E8/E8M;
ASTM A370;
ASTM B557;
ASTM D638;
DIN 53357;
DIN EN 895 (1999-05);
DIN EN ISO 4136;
DIN EN 10002-5 (1992-02);
DIN EN ISO 6892-2;
DIN EN 1464,DIN EN 28510-1;
DIN EN ISO 527-2 ;
DIN EN ISO 527-3;
DIN EN ISO 844;
DIN EN ISO 1421;
PV 2034

Flexural Strength
0.05 N to 100 kN

DIN EN ISO 178;
ASTM D790

Flammability Horizontal

FMVSS 302;
49 CFR 571.302;
GMW 3232;
BMW GS97038;
DIN 75200;
VW TL1010;
VW PV 3357;
DBL 5307;
GB 8410;
VOLVO VCS 5031,19;
VOLVO STD 104-0001;
TOYOTA BS DM 0500;
SAE J369;
Stellantis LP.7M079;
ISO 3795;
Fiat Chrysler FCA MS.90095 Part A § 3A (MS-
JP-9-4 / ISO 3795)

Impact Resistance

DIN EN ISO 6272-1



Test	Test Method(s)
Color	C.I.E. L*A*B*; SAE J1545; ASTM D2244; ASTM E1349; ASTM E1331; DIN 5033-4 DIN EN ISO/CIE 11664-4 DIN 53236; DIN EN ISO/CIE 11664-4; VW 50190; VW 50195 Section 3.2.1 (Solid Paint); DIN EN ISO 3668; VCS 1024, 31139
Gloss (20/60/85)°	ASTM D523; DIN EN ISO 2813; DIN 67530; MBN 10949-4 Section 5.1
Surface Energy (36 to 53) mN/m	DIN ISO 8296; ASTM D2578
Cross Hatch/Adhesion (1 to 100) %	ASTM D3359; BMW GS 97051; BMW AA-0180; DIN EN ISO 2409; DBL 5306 Section 3.1 (2008-12); MBN 15306; DBL 7399 Section 5.1; DBL 7382 Section 9.7; DBL 7384 Sections 8.2 and 8.4 (2020-10) replaced by DBL 1302; MBN 10494-5; GMW14698 – Method C; VCS 1029,54729; VCS 1029,54739; FLTM BI 106-01-B
Density	DIN EN ISO 845; DIN EN ISO 1183-1; ASTM D792
Stability and Shrinkage	BMW PR 292 (2017-12); BMW PR 11737558
Static Elongation	PV 3909, Test Equipment 1

Test	Test Method(s)
Odor	VDA 270; BMW PR 292 (2017-12); BMW PR 11737558; GMW3205-A, B, C; FLTM BO 131-03; PV 3900; VCS 1027,2729; TPJLR 52.458; SAEJ 1351; DBL 5430; DBL 1000; NIO-TP.GS GS002-2016; Volvo STD 429-00; BMW PR 397 (2017-05); BMW PR 11737727; BMW GS 97014- 4; Stellantis LP-463KC-09-01; GMW 17914 Method C; ISO 12219-7; Lotus LTS 22001-2019 § 5; Polestar DVM-INT-01716; Rivian RTS.1754; PSA D10 5517
Amine Staining	PV 3937; PSA D10 5496; PV 3944
Cleaning Test/Resistance to Media/Chemical Resistance	BMW PR 292 (2017-12); BMW PR 11737558; PV 3922; PV 3964 BMW PR 557; BMW GS 97034-12; BMW GS 97034-13
Stress Cracking	DIN EN ISO 22088-3; DBL 5416 8.2; DBL 5404 7.13; DBL 9202 9.19 (2021-11); DBL 1752; VW PV 3983
Photogrammetry	Measurement per Customer Spec.

Test**Test Method(s)**

Colorfastness of Textiles
(D65, CWF/F2, Hor)

DIN EN ISO 105-E01;
DIN EN ISO 105-E03;
DIN EN ISO 105-E04;
AATCC-TM15 against perspiration;
DIN EN 20105-A02;
ISO 105-A02;
DIN EN ISO 105-A05;
Volvo STD 1026,8432;
Volvo VCS 1026,84329

Material Thickness
(Up to 25) mm

ASTM D1777;
ASTM D751

Ball Drop

DBL 5306 7.3 (2008-12);
MBN 15306-3 §5.19;
VW PV 3905;
MBN 55555-6 & 5.17 (2018-02);
MBN 51000-6;
VW PV 3966;
VW PV 3989;
VW PV 3971;
Nissan NES M0134

Coating Thickness/Dry Film Thickness – Paint/Non-Metallic
(Up to 60) mils

ASTM D7091;
DIN EN ISO 2808, 2360, 2178

Abrasion Resistance - Taber

ASTM D3884;
ASTM D4060;
DIN EN ISO 5470-1

Wear Testing, Crocking

SAE J861;
ISO 20433;
DIN EN ISO 4628-4;
DIN EN ISO 105-X12
DBL 5306 §4 (2008-12);
MBN 15306;
MBN 55555-6, §5.8 (2018-02)
MBN 51000-6;
MBN 55555-7 §5.2, §5.4 (2018-11);
MBN 51000-7;
FLTM BN 107-01;
FLTM BN 107-02;
VW PV 3987;



Test**Test Method(s)**

Wear Testing, Crocking (cont'd)

VW PV 3991;
VW PV 3906;
BMW AA-0134;
BMW GS 97034-10;
BMW GS 97034-6-C;
BMW GS 97034-5;
Polestar DVM-INT-01744;
Polestar TI-INT-036;
RECARO TC 5048732 § 10;
Rivian RTS.1749;
Rivian RTS.1750 § 5.1 + § 5.2;
Tesla TP-0000703 Procedure A;
VDA 621-424;

Durometer Hardness (Shore A)

ASTM D2240;
DIN ISO 48-4

Pressure Washer Test

VW PV 1503, B,C;
DIN 55662 Method B (2009-12);
DIN EN ISO 16925;
MBN 10494-5 (2023-10);
MBN 50494-5;
VW 96172;
VW 96173;
VW 96208;
PTL 5524, PTL 5525, PTL 7520;
DBL 7381 (2023-12);
DBL 1551;
DBL 5416 12.6;
DBL 5425, 8.7;
FLTM BO 160-04-A;
BMW AA-0136

Stone Chip Resistance (Multi Impact Testing)

DBL 5416 Section 12.5;
DBL 5425, 8.6 (2020)
DIN EN ISO 20567-1;
VW PV 3.14.7;
DBL 7399;
MBN 10494 (2023-10);
MBN 50494-5;
BMW GS 93036 § 6.11;
BMW AA-0079

Test	Test Method(s)
Determination of Volatile and Semi-Volatile Organic Compounds Using Gas Chromatography	GM/Opel GMW 15634; PSA D10 5495; VDA 278; Ford BZ-108-01; Toyota TSM 0508G; VW 96424; ISO 16000-6; DIN EN ISO 16017-1; DIN EN ISO 16017-2
Determination of the Emissions of Volatile Organic Compounds from Vehicle Interior Parts and Materials – Small Chamber	ISO 12219-2; ISO 12219-4; ISO 12219-6; ISO 12219-7; PV 3942; VDA 276-3; BMW GS 97014-2; BMW GS 97014-3; BMW GS 97014-4 ; NISSAN NES M0402 ; SES N2403 ; Honda 0094Z-SNA;
HPLC Measurements	ISO 16000-3; VDA 275; BMW AA-0061; DIN EN ISO 17226-3; DIN EN ISO 17226-1; DIN EN 717-1; GMW 15635; Ford FLTM BZ 156-01-B (HPLC); VW PV 3925 (HPLC)
Fogging	DIN 75201 ISO 6452 PSA D45-1727; LP-463DB-12-01 RNES-B-0070 TSM 0503 G-B gravimetric and reflectometric GMW 3235 PV 3015 SAE J1756 Geely Q/JLY J7110341D Polestar DVM-INT-013 (Fogging G) Polestar DVM-INT-081 (Fogging G)

Test**Test Method(s)**

Fogging (cont'd)

Volvo VCS 1027, 2719

Electrical Testing

Dry Circuit Resistance

SAE USCAR 21-4 Sec. 4.5.3;
SAE USCAR 38 Sec. 4.7.1

Voltage Drop
(5 – 100) Amps Source

SAE USCAR 21-4 Sec. 4.5.6;
SAE USCAR 38 Sec. 4.7.2

Dielectric Test/Withstanding Voltage
(0.6 to 6) kVDC Source
(0.5 to 5) kVAC Source
(0.6 to 6) mADC Measure
(2 to 20) mAAC Measure

Fiat Chrysler PF90051 Sec. 6.4.4

Ingress Protection/
Liquids (IPX3, X4, X5, X7, X8, X9K)
Liquids (IP3, 4, 5, 7, 8)

ISO 20653;
ANSI/IEC 60529

Solids (IP 5KX & 6KX)
Solids (IP 5 & 6)

ISO 20653;
ANSI/IEC 60529



Calibration

I. Thermodynamics

Parameter/Equipment	Range	CMC ($\pm$) ¹	Comments
Temperature – Measure ²	(-196 to 420) °C	0.06 °C	Fluke 1524 w/PRT
	(-70 to 180) °C	0.73 °C	Vaisala HMP77B
Temperature – Measure Equipment	(-40 to 130) °C (0 to 110) °C (50 to 350) °C	0.84 °C 0.29 °C 0.74 °C	Fluke 1524 w/probe & chamber
Relative Humidity – Measure ²	(10 to 90) % RH (90 to 95) % RH	1.5 % 2.2 %	Vaisala HMP77B

¹ Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMC's represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

² Field calibration service is available for this calibration. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.



Accredited Laboratory

A2LA has accredited

imat automotive technology services, inc.

Greenville, SC

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 27th day of December 2024.

A blue ink signature of Mr. Trace McInturff, written over a horizontal line.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 5095.02
Valid to October 31, 2026
Revised February 9, 2026

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