SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

RELIABLE ANALYSIS – SHANGHAI, INC.
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MECHANICAL

Valid To: May 31, 2025 Certificate Number: 0386.04

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on adhesives, coatings (paints), deadeners, elastomers, foams, foundation board, metal, automotive paperboard, plastics, rubber, sealers, tapes, and automotive textiles:

Test:	**Standard:**[1, 2]
Abrasion Resistance / Wear Resistance	ASTM D3884, D4060, D4157; ISO 12947-1/2/3/4; ISO 5470-2 (except Sec. 5.2.2); SAE J365, J948, J1530; Chrysler LP-463KB-06-01, LP-463KB-21-01; FLTM BN 108-02; GM 9082P1, 9515P1; GMW 3208, 3283, 15487
Acid Spotting Resistance	FLTM BI 113-02
Adhesion Test	ASTM D3359; FLTM BI 106-01, -02; GM 9071P1, 9502P1; GMW 14829; VCS 1029,54739; VCS 1029,54729; ISO 2409; GB/T9286 ASTM B571
Adhesive Strength	FLTM BN 151-01; GMW14892
Aldehyde and Ketonic Emission Test	GMW 14236, 15635; PV 3925; SMC 30155; VDA 275; VCS 1027,2739
Ash Content	ASTM D2584; ISO 3451-1 (Method A)
Bleeding, Perspiration, and Water Spotting	FLTM AN 101-01; GMW14102
Blocking Resistance	GMW 14132

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Test:	**Standard:**[1, 2]
Bond Strength	Chrysler LP-463LB-10-01 (except Proc. C); FLTM BN 121-01; GMW 3220; ISO 11339
Breaking Strength	ASTM D2208, D5034; ASTM D5035 (Strip Method)
Corrosion	ASTM B117, B368; IEC 60068-2-11, 60068-2-52; ISO 9227, 16750-4, (Sec. 5.5); FLTM BI 103-01, BQ 105-01; GMW 3286, 14458, 14872; GMW 3172: 2018 (Sec.9.4.7, 9.4.8); VCS 1027,1449; CETP:00.00-L-467; CORWHEEL; 7734COR; CORMUD; TP-0000808;
Chemical Resistance	SAE J913; FLTM BO-101-05; GMW 3402, 14333, 14334, 14445, 14701; TP-0000703; Ford DVM 0036, DVM 0039
Chip Resistance (Gravelometer)	SAE J400; GMW 14668, 14700; DIN 55996; ISO 20567; D24 1312; VCS 1024,7136; FLTM BI 157-06; TPJLR.52.599
$1M^3$ Chamber Method	ISO 12219-4; PV3942; VCS 1027,2769
Cleanability and Soilability	GMW3402; Chrysler LP-463KC-04-01; FLTM BN 112-08
Cold Cracking Resistance	ASTM D1912; GMW 14126, 14127 (Part A)
Color Measurement	ASTM D2244; GMW 4750; SAE J1545
Color Migration	ISO 15701
Colorfastness	AATCC 23; ISO 105-G02; AATCC Method 107
Compression Load Deflection	ISO 3386

Test:	**Standard:**[1, 2]
Compression	ASTM D3574 (Method D); ISO 815-1, 1856, 3386-1
Connector Installation Abuse	GMW 3172: 2018 (Sec. 9.3.8, 9.3.9)
Connector and Terminal Mechanical Tests	GMW 3172: 2018 (Sec. 9.3.7); GMW 3191 (Sec. 4.2.3, 4.2.4, 4.2.5, 4.2.7, 4.2.18, 4.2.19, 4.2.20)
Crocking	AATCC Method 8; ASTM D6279; GM 9033P1; ISO 105-X12, 20433, 11640; PV 3906; FLTM BN 107-01/02; Chrysler LP-463PB-54-01; SAE J861
Cross Section and Inspection	GMW3172: 2018 (Sec. 6.6)
Crush For Housing	GMW 3172: 2018 (Sec. 9.3.5, 9.3.6)
Cure Test	GM 9509P1; GMW 14867, 15891; Chrysler LP-463PB-31-01
Density	ASTM D1475; FLTM BN 106-01; ISO 1183-1 (Method A)
Determining the Tackiness of Polypropylene Parts	PV 1306; PES 11040
Dimensional Check	GMW3172: 2018 (Sec. 6.7)
Dimensional Stability	ISO 17130; GMW 3262 (Sec. 3.2.8), 4217, 14444 (Sec. 3.4.11); FLTM BN 005-02, BN 105-01
Distinctness of Image (DOI)	VCS 1026,52749; ASTM D5767
Determination of Crack and Pore Number	ASTM B456, B604
Drop	ISO16750-3 (Sec. 4.3); GMW 3172: 2018 (Sec. 9.3.10)
Effect Amines	GMW 14131; VDA 230-223
ELV	IEC 62321, IEC 62321-1/-2/3/4/5/6, IEC 62321-7-1/2; ISO 22262-1/2; QC/T 941, 942, 943, 944; Q/JLY J7110808B; GB/T 23263; AfPS GS 2019:01 PAK

Test:	**Standard:**[1, 2]
Emission of Chamber Method	TS-BD-003, PES11081; SMTC 5 400 018; ISO 12219-2/4; FLTM BZ-108-01; 01.12-L-10661; TP-0001008; ENG-010-001; QS-130-001; PV3942; VCS 1027, 2769
Emissions of Materials	ISO 12219-3; GMW 8081, 14236, 15634, 15635; PV 3341, 3925; SMC 30155, 30158; VDA 275, 277, 278; TPJLR.52.104; Q/SQR.04.098; TS-INT-002; VCS 1027,2739, VCS 1027,2749, VCS 1027,2759
Environmental Cycle	ASTM D3012; ISO 188 (Method B), 4577, 6270-2, 15512 (Method A); ISO 16750-4, Secs. 5.1, 5.2, 5.3, 5.4, 5.6, 5.7; PV2005; TP-0000706; GM 9200P1; GMW 3286, 14124, 14729, 14668 (Sec. 3.4.7, 3.4.8, 3.4.9); VCS 1027,33759; FLTM BI 104-02 Method A, BQ 104-07; Chrysler LP-463LB-12-01;
Extensibility	VCS 1024,11419
Fabrics	
Test Methods, Coated Fabrics	ASTM D751 (*except Secs. 22-25, 41-49*, *54-63, 65-70, 89-98*); GMW 14122
Bow and Skew	ASTM D3882
Fiber Deterioration	GM 9771P[1]; GMW 3387
Filiform Resistance	GMW15287; SAE J2635; ASTM D2803
Film Thickness	ASTM B487; ISO 1463, 2808; GB/T6462
Flammability	FMVSS 302; GB 8410; GMW 3232; ISO 3795; SAE J369; VCS 5031,19; TL 1010, 1011; UL94
Flex Test / Newark Flex / “W” Flex	ASTM D2097; FLTM BN 102-02; ISO 5402

Test:	**Standard:**[1, 2]
Flexural Strength / Flexural Properties	ASTM D790; ISO 178
Fogging Test	Chrysler LP-463DB-12-01; GM 9305P[1]; GMW 3235; PV 3015; SAE J1756; SMC 30157; DIN 75201; VCS 1027,2719
Fretting Corrosion Degradation	GMW 3172: 2018 (Sec. 9.3.11)
FTIR	ASTM E1252 (Sec. 7.9); GB/T 6040
Function	GMW3172: 2018 (Sec. 6.1, 6.2, 6.5)
Gloss Measurement	ASTM D523; Chrysler LP-463PB-11-01; FLTM BI 110-01; ISO 2813; VCS 1026,52729
Hardness	ASTM D2240; ISO 48(M), 868, 2039; VDA 675202; DIN 53505
Hydrogen Sulfide Resistance	FLTM AN 102-01; GMW 14864
Immersion	FLTM BI 104-04
Impact	ASTM D256, D3763; ISO 179-1, 180, 6603-2, 16750-3 (Sec. 4.3); FLTM BO 151-01; GM9300P[1]; GMW 14093, 14127
Mass and Thickness Determination	ASTM D3776 (Option C); ISO 2286-2 (Method A), 2589, 5084; SAE J860 (Mass), J882 (Thickness); GMW 3182
Mechanical Shock	ISO 16750-3 (Sec. 4.2.1, 4.2.2); GMW 3172 (Sec. 9.3.2, 9.3.3, 9.3.4)
Mildew	GMW 3259
Mold Shrinkage	ISO 294, 2577

Test:	**Standard:**[1, 2]
Odor Test	FLTM BO 131-01, BO 131-03; GMW 3205; SAE J1351; VDA 270; VCS 1027,2729; PV 3900; PES11082
Ozone	ISO 1431-1
Peel Strength	ASTM B533 (Method A), D903; Chrysler LP-463TB-03-01; FLTM BN 151-05; GM 9797P[1]; ISO 11644, 8510-2
Perspiration Staining Resistance	Chrysler LP-463KC-21-01; FLTM BI 113-03; GM 9240P[1], 9517P[1]; GMW 14296, 14334
Permeability of fabrics to air	ISO 9237
Plating Thickness	ISO 1463, 2177; GB/T4955
Protection of electrical equipment against foreign objects, water and access	ISO 16750-4 (Sec. 5.10), 20653; GMW3172: 2018 (Sec. 9.5.1, 9.5.2, 9.5.3, 9.5.4, 9.5.5, 9.5.6);
Rubber, Vulcanized or Thermoplastic-Determination of Low-Temperature Brittleness	ISO 812
Scratch and Mar Resistance	ISO 1518; Chrysler LP-463DD-18-01; FLTM BN 108-13, BO 162-01; GM 9150P[1], GM 9506P[1]; GMW 3347, 14130, 14688, 14698; PV 3952;
Seam Strength	ISO 13935-1
Seam Fatigue	GMW 3405; FLTM BN 106-02
Shear Test	FLTM BU 101-06; FLTM BV 154-03
Sliding Resistance for Side Window Weatherstrips	GMW 15683
Softness	GMW 14134
Spotting Resistance	FLTM AN 101-01, BI 113-02; Chrysler LP-463KC-03-01; GM 9133P[1]; GMW 14102
STEP Test	ASTM B465, B764; GMW 14668 (Sec. 3.4.3)

Test:	**Standard:**[1, 2]
Stretch and Set of Textile and Leather	SAE J855; GMW 3211
Temperature/Humidity cycle	ISO16750-4 (Sec. 5.3.1, 5.6); IEC 60068-2-38; IEC 60068-2-14 (Sec. Nb); GMW 3172: 2018 (Sec. 6.9, 8.4.1, 9.4.3, 9.4.5, 9.4.9); 3191 (Sec. 4.4.3)
Temperature/Humidity storage	ISO 16750-4 (Sec. 5.1, 5.2, 5.7); IEC 60068-2-1/2/78; GMW 3172: 2018 (Sec. 8.4.2, 8.4.3, 9.4.1, 9.4.6); GMW 3191 (Sec 4.4.1, 4.4.4)
Tensile Strength / Tensile Properties	ASTM D412 (Method A, *except Secs. 12.2 and 12.3*), D638, D882, D1708, D2256, E132; ISO 37, 527, 1421, 1798; Chrysler LP-463CB-08-01; FLTM BN 150-04; GB 10654; GMW 3010
Tear Strength / Resistance	ASTM D624 (Die C, *except Appendix*), D1004, D2261, D5587, D5733; ISO 34-1, 3377-1, 4674-1 (Method B), 13934-1, 13937-2, 23910; DIN EN 12127; FLTM BN 150-02; GM 914P[1]; GMW 3326, 14146
Thermal Shock	FLTM BI 107-05; GMW 15919
Thermal Shock (Air to Air/water)	IEC 60068-2-14 (Sec. Na); ISO 16750-4 (Sec. 5.3.2, 5.4); GMW 3172: 2018 (Sec. 9.4.2, 9.4.4); GMW 3191 (Sec. 4.4.2)
Thermomechanical Analysis	ASTM E831, D1525; ISO 75-1/-2, 306, 1133-1/2, 11357-1/-2/-3, 11358-1/-2, 11359
Vibration	ISO16750-3 (Sec. 4.1); GMW3172: 2018 (Sec. 6.8, 9.3.1, 10.3.1); GMW3191 Section 4.4.8
Water Jet	GM 9531P[1] (Method B); GMW 16745; VCS 1029,54719; FLTM BO 160-04
Water Vapor Permeability	GMW 14140

Test:	**Standard:**[1, 2]
Xenon Exposure	AATCC Method 16; ASTM D7356, D7869; ISO 105-B06, condition 3/5, 16750-4 (Sec. 5.10); PV 1303; SAE J1885[1], J1960[1], J1976, J2412, J2527; FLTM BI 104-02 Method A, BO 116-01; VDA 75202; GME 60292; GMW 3414; GB16422; VCS 1027,339, VCS 1027,359, VCS 1027,3379; STD 1026, 8242; CC080008-C

[1] 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.

[2] When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA *R101 - General Requirements- Accreditation of ISO-IEC 17025 Laboratories*.

Accredited Laboratory

A2LA has accredited

RELIABLE ANALYSIS (SHANGHAI), INC.

Shanghai, People's Republic of China

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 6th day of July 2023.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0386.04
Valid to May 31, 2025

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