



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

RELIABLE ANALYSIS – SHANGHAI, INC.  
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MECHANICAL

Valid To: June 30, 2017

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:

<b><u>Test:</u></b>	<b><u>Standard:</u></b>
Abrasion Resistance / Wear Resistance Taber	ASTM D3884, D4060; Chrysler LP-463KB-21-01; FLTM BN 108-02; GM 9515P; GMW 3208, 15487
Schopper	GMW 3283
Wyzenbeek	Chrysler LP-463KB-06-01; GM 9082P; SAE J948, J1530
Abrex	FLTM BN 155-01
Abrasion Resistance and Surface Strength/Scratch Resistance	ISO 16750-3:2012 (Sec. 4.4)
Acid Spotting Resistance	FLTM BI 113-02
Adhesion Test	ASTM D3359; FLTM BI 106-01, -02; GM 9071P, 9502P; GMW 14829
Adhesive Strength	FLTM BN 151-01; GMW14892
Ash Content	ASTM D2584; ISO 3451-1 (Method A)
Bleeding, Perspiration, and Water Spotting	FLTM AN 101-01

**Test:****Standard:**

Blocking Resistance	GMW 14132
Bond Strength	Chrysler LP-463LB-10-01 ( <i>except Proc. C</i> ); FLTM BN 121-01; GMW 3220
Breaking Strength, Grab Method	ASTM D2208, D5034
Breaking Strength and Elongation	ASTM D5035 (Strip Method)
Brittleness by Means of a Mandrel	GM 9503P
CASS Corrosion	ASTM B368; FLTM BQ 105-01; GMW14458
Cellular Material Urethane Foams	ASTM D3574 ( <i>except Secs. 23-29, 76-112</i> )
Charpy Impact	ASTM D256; ISO 179
Chemical Resistance	FLTM BO-101-05; GMW14334; GMW 3402, 14333, 14701
Chip Resistance (Gravelometer)	GMW14700; SAE J400; GMW 14668, 14700; DIN 55996; ISO 20567; D24 1312
Cleanability	GMW3402
Cleanability and Soilability	Chrysler LP-463KC-04-01; FLTM BN 112-08
Cold Cracking Resistance	ASTM D1912; GMW 14126, 14127 (Part A)
Color Change Due to Temperature and Humidity	GM 9131P
Color Measurement	ASTM D2244; GMW 4750; SAE J1545
Color Migration	ISO 15701
Colorfastness to Burnt Gas Fumes	AATCC 23; ISO 105-G02
Colorfastness to Crocking	AATCC Method 8; GM 9033P; ISO 105-X12, 20433, 11640; PV 3906

**Test:****Standard:**

Colorfastness to Light	AATCC Method 16
Colorfastness to Water	AATCC Method 107
Compression Load Deflection	ISO 3386
Compression Set	ASTM D3574 (Method D); ISO 1856, 3386-1
Crazing of Vinyl Material	GM 9143P
Crocking	FLTM BN 107-02
Crock Mar Resistance	Chrysler LP-463PB-54-01; FLTM BN 107-01; SAE J861
Cure Test	GM 9509P; GMW 14867, 15891
Cyclic Corrosion Test	GMW 14872; ISO 16750, (Sec. 5.5)
Density	ASTM D1475; FLTM BN 106-01; ISO 1183-1 (Method A)
Determining the Tackiness of Polypropylene Parts	PV 1306; RES 11040
Differential Scanning Calorimetry	ISO 11357
Dime Scrape	GM 9506P
Dimensional Stability	GMW 4217, 14444 (Sec. 3.4.11)
Determination of Crack and Pore Number	ASTM B456, B604
Dust test	ISO 16750-4:2010 (Sec. 5.10)
Effect Amines	GMW 14131
Emissions of Plastics Bag Method	TS-BD-003; SMTC 5 400 018(V1); ISO 12219-3
Environmental Cycle	Chrysler LP-463LB-12-01; FLTM BQ 104-07; GM 9200P; GMW 3286, 14124, 14729; ISO 188; ISO 4577; ISO 188; ASTM D3012; ISO15512 (Method A); ISO 16750-4:2014 Secs. 5.1, 5.2, 5.3, 5.4, 5.6, 5.7

**Test:****Standard:**

## Fabrics

Test Methods, Coated Fabrics

ASTM D751 (*except Secs. 22-25, 41-49, 54-63, 65-70, 89-98*);

GMW 14122, 14231

Length

ASTM D3773 (Option A)

Width

ASTM D3774 (Option B)

Fabric Count

ASTM D3775

Mass

ASTM D3776 (Option C)

Bow and Skew

ASTM D3882

Weight Loss

GM 9337P

Fiber Deterioration

GM 9771P;

GMW 3387

Filiform Resistance

GMW15287;

SAE J2635

Film Thickness

ISO 2808

Flammability

Horizontal Flame Test

FMVSS 302;

GB 8410-2006;

GMW 3232;

ISO 3795;

SAE J369

Vertically Burning Test

UL94

Flex Test / Newark Flex / "W" Flex

ASTM D2097;

FLTM BN 102-02;

ISO 5402

Flexibility of Automotive Textiles

GMW 3390

Flexural Strength / Flexural Properties

ASTM D790;

ISO 178

Fogging Test

Chrysler LP-463DB-12-01;

GM 9305P;

GMW 3235;

PV 3015;

SAE J1756;

SMC 30157;

DIN75201;

VCS 1027 2719

Aldehyde and Ketonic Emission Test

GMW 14236, 15635;

PV 3925;

SMC 30155;

VDA 275;

VCS 1027 2739

Friction Test

ASTM D1894;

FLTM BN 014-03

**Test:****Standard:**

Gloss Measurement	ASTM D523; Chrysler LP-463PB-11-01; FLTM BI 110-01; ISO 2813
Heat Deflection Temperature (HDT)	ISO 75, 306
Hydrogen Sulfide Resistance	ASTM D1712; FLTM AN 102-01; GMW 14864; SAE J322
Immersion	FLTM BI 104-04
Impact Resistance	FLTM BO 151-01; GM9300P; GMW 14093, 14127
Impact - Free Fall	ISO 16750-3:2012 (Sec. 4.3)
Izod Impact	ASTM D256; ISO 180
Lint Retention	GMW 3347
Loop Pullout	GMW14148
Mandrel Bend	GM 9503P (Sec. 12)
Mass and Thickness Determination	GMW 3182; ISO 2589, 5084; SAE J860 (Mass), J882 (Thickness)
Melt Mass Flow and Melt Volume Flow (MFR & MVR)	ISO 1133
Mildew	GMW 3259
Mold Shrinkage	ISO 294, 2577
Multi-axial Impact	ASTM D3763; ISO 6603
Odor Test	FLTM BO 131-01, BO 131-03; GMW 3205; SAE J1351
Peel Strength	ASTM B533, D903; Chrysler LP-463TB-03-01; FLTM BN 151-05; GM 9797P; ISO 11644, 8510-2

**Test:****Standard:**

Perspiration Staining Resistance

Chrysler LP-463KC-21-01;  
FLTM BI 113-03;  
GM 9240P, 9517P;  
GMW 14296, 14334

Plating Thickness

ISO 1463, 2177

Pliability

GM 9151P, 9664P

Poisson's Ratio

ASTM E132

Quick Thermal Cycle

GMW 14668

Saw Grind Adhesion Test

ASTM B571

Salt Spray Tests

ASTM B117;  
FLTM BI 103-01;  
GMW 14458, 3286;  
ISO 9227

Scratch and Mar Resistance

Chrysler LP-463DD-18-01;  
FLTM BN 108-13;  
GM 9150P;  
GMW14698;  
GMW 14130, 14688;  
PV 3952

Scuffing Resistance

FLTM BN 108-04;  
GM 9150P;  
SAE J365

Seam Strength

Chrysler LP-463KB-13-01;  
GM 9129P

Shear Test

FLTM BU 101-06

Shrinkage Test

FLTM BN 005-02, BN 105-01;  
GMW 3262 (Sec. 3.2.6)

Softness

GMW 14134

Solvent Wipe Resistance

Chrysler LP-463PB-31-01;  
GM 9509P

STEP Test

ASTM B465, B764;  
GMW 14668

Stretch and Set of Textile and Leather

SAE J855;  
GMW 3211

Suntan Lotion and Insect Repellant

Ford DVM 0036, DVM 0039;  
GMW 14445

Temperature Cycle

GMW 14668

Temperature Storage

GMW 14668

**Test:****Standard:**

Tensile Strength / Tensile Properties

ASTM D412 (Method A, *except Secs. 12.2 and 12.3*), D638, D882, D1708, D2256;  
Chrysler LP-463CB-08-01;  
FLTM BN 150-04;  
GB 10654-89;  
GMW 3010;  
ISO 37, 527, 1798

Tear Strength / Resistance

ASTM D624 (Die C, *except Appendix*), D1004, D2261, D5587, D5733;  
FLTM BN 150-02;  
GM 9149P;  
GMW 14146;  
ISO 13937-2

Thermal Shock

FLTM BI 107-05;  
GMW 15919

Thermomechanical Analysis

ISO 11359;  
ASTM E831

TVOC Test

PV 3341;  
GMW8081;  
Q/SQR.04.098;  
SMC 30158;  
TS-INT-002;  
VDA 277

Vibration

ISO 16750-3:2012 (Sec. 4.1);  
GMW 3172:2012 (Sec. 9.3.1)

Mechanical shock

ISO 16750-3:2012 (Sec. 4.2);  
GMW 3172:2012 (Sec. 9.3.2)

Water Immersion

FLTM BI 104-01

Water Jet

GM 9531P (Method B)

Water Spotting and Soap Spotting Resistance

Chrysler LP-463KC-03-01;  
FLTM AN 101-01;  
GM 9133P

Water Vapor Permeability

GMW 14140

Wicking Test

SAE J913

Xenon Exposure

AATCC Method 16;  
GME 60292; GMW 3414;  
ISO 105-B06, condition 5;  
PV 1303;  
SAE J1885, J1960, J2412, J2527;  
FLTM BI 104-02 Method A;  
ISO 105-B06 condition 3;  
VDA 75202;  
GB16422ISO 16750-4 (Sec. 5.10)



## *Accredited Laboratory*

A2LA has accredited

### **RELIABLE ANALYSIS - SHANGHAI, INC.**

*Shanghai, China*

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 26<sup>th</sup> day of May 2015.

A handwritten signature in black ink, written over a horizontal line.

President and CEO  
For the Accreditation Council  
Certificate Number 0386.04  
Valid to June 30, 2017  
Revised May 15, 2017

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