



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Q-LAB ARIZONA DESERT TESTING  
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MECHANICAL

Valid To: September 30, 2026

Certificate Number: 0859.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the weathering and corrosion tests:

Natural Weathering in a Desert Environment: Direct and under glass exposures at fixed or variable angle using standard panel racks, special mounting racks, and black boxes with backed and unbacked mounting; automotive interior large component/assembly cabinets; special fixtures designed to meet specific client needs, complete climatological data acquisition and reporting.

Evaluations: Visual inspection for all property changes detectable to the unaided eye or under magnification. Instrumental evaluations to measure degradation effects, including gloss and color, mechanical measurements of physical properties before and after exposure.

On the following materials: Automotive Components, Plastics, Paints, Textiles, Roofing, Sealants, Glass, Photovoltaic, and Solar Heating materials

***Arizona Hot Desert Outdoor Weathering***

OUTDOOR WEATHERING RESISTANCE		
Type of Test <sup>1</sup>	Measured Conditions	Exposure Parameters & Capabilities
Natural Weathering Resistance: <i>Q-RACK Testing</i>	Radiation Exposure Angle Air temperature Black and White Panel Temperature Time of Wetness Wind speed Wind direction Precipitation	Gravel ground cover Variable Angle Test Fixtures (5°, 33°, 45° & 90° common) Unbacked, mesh-backed, plywood backed and black box exposure Direct or under glass Benchmark Hot Desert Climate (~5-40°C, 30-40% RH)

OUTDOOR ACCELERATED WEATHERING RESISTANCE		
Type of Test <sup>1</sup>	Measured Conditions	Exposure Parameters & Capabilities
Glass-Covered Apparatus with Air Circulation: <i>AIM Box Testing</i>	Radiation Exposure Angle Black Panel Temperature	Static or Tracking Test Fixtures at 45° South Angle Unbacked, mesh-backed, and plywood backed exposure Tempered or laminated glass Temperature-controlled
Solar Concentrator with Air Circulation: <i>Q-TRAC Testing</i>	Radiation Black Panel Temperature	Static Test Fixtures at 45° South Angle Temperature-controlled

WEATHERING AND CORROSION EVALUATIONS		
Type of Test <sup>1</sup>	Reportable Parameters	Equipment Capabilities/Ranges
Dry Film Thickness	µm (inch mils)	0-500 µm (0-20 mils)
Instrumental Color	<u>Scales</u> CIELAB, Hunter Lab, YXZ, Yxy, YI, WI, Instrumental Gray Scale <u>Tolerances</u> DE, DE2000, CMC	Geometry 8° Sphere
Specular Gloss	20°, 60° & 85°	20° 0-2000 GU 60° 0-1000 GU 85° 0-160 GU
Visual Assessment (qualitative)	Blistering Chalking Checking/Cracking Color (visual) Corrosion Dirt Erosion Flaking Surface Rust Visual Gray Scale	Light Booth <i>Illuminant</i> D65 A CWF <i>Intensity</i> 1080 - 1340 lux  North Facing Window
Fiber Collection by Adhesive Tape	Resistance of Textiles to Fiber Degradation	Not Applicable

PHYSICAL AND MECHANICAL TESTING		
Type of Test <sup>1</sup>	Measurement / Test Parameter	Measurement and Testing Range
Length measurement		Caliper (0-150 mm)
Specimen Weighing <sup>+</sup>	Mass	0.000 - 200.000 g
Tape Adhesion	Cross-hatch and X-Scribe	1-3 mm spacing Scribe tools Single blade or Multi-cutter

<sup>1</sup> Using the following test methods in addition to customer-supplied methods directly related to the types of tests and parameters above:

**OUTDOOR WEATHERING: Q-RACK TESTING**

ASTM G7	Atmospheric Environmental Exposure Testing of Nonmetallic Materials
ASTM G24	Conducting Exposures to Daylight Filtered Through Glass
SAE J576	Plastic Materials for Optical Parts
SAE J1976	Outdoor Weathering of Exterior Materials

**OUTDOOR ACCELERATED WEATHERING: AIM BOX TESTING**

ASTM G201	Conducting Exposures in Outdoor Glass-Covered Exposure Apparatus with Air-Circulator
GMW 3417	Natural Weathering Exposure of Interior Trim/Materials

**OUTDOOR ACCELERATED WEATHERING: Q-TRAC TESTING**

ASTM G90	Performing Accelerated Outdoor Weathering of Nonmetallic Material
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**WEATHERING EVALUATIONS: DRY FILM THICKNESS (DFT)**

ASTM D7091	Dry Film Thickness of Ferrous and Non-Ferrous Metals
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**WEATHERING EVALUATIONS: INSTRUMENTAL COLOR**

ASTM D1003, Method B	Haze and Transmittance of Transparent Plastics
ASTM D2244	Calculation of Color Differences from Instrumentally Measured Color Coordinates
ISO 4582	Plastics — Determination of changes in colour and variations in properties

**WEATHERING AND CORROSION EVALUATIONS: SPECULAR GLOSS**

ASTM D523	Test Method for Specular Gloss
ISO 2813	Determination of Specular Gloss of Non-Metallic Paint Films at 20°, 60°, and 85°

**WEATHERING EVALUATIONS: VISUAL ASSESSMENT**

ASTM D2616	Evaluation of Visual Colors Difference with a Gray Scale
ISO 105-A02	Grey Scale for Assessing Change in Colour
GMW 3387	Procedure for Determining Fiber Degradation of Automotive Textiles

**PHYSICAL AND MECHANICAL TESTING: SPECIMEN WEIGHING**

TP-14 (Internal Procedure)	Specimen Weight Measurements
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**PHYSICAL AND MECHANICAL TESTING: TAPE ADHESION**

ASTM D3359	Measuring Adhesion by Tape Test
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***Additional Standards***

**OUTDOOR WEATHERING: Q-RACK TESTING**

ASTM D1006	Exterior Exposure of Paints on Wood
ASTM D1014	Exterior Exposure of Paints on Steel
ASTM D1435	Outdoor Weathering of Plastics
ASTM D3679	Standard Spec for Rigid Poly (Vinyl Chloride) (PVC) Siding

ASTM D4141                      Conducting Accelerated Outdoor Exposure Tests of Coatings  
ASTM D4303                      Lightfastness of Colorants used in Artists Materials  
(Method A & B)

**OUTDOOR WEATHERING: Q-RACK TESTING (CONT)**

ASTM D4726                      Standard Spec for Rigid Poly (Vinyl Chloride) (PVC) Exterior Profile  
Extrusions used for Assembled Windows and Doors  
ASTM D6864                      Plastic Siding Weathering  
ASTM D7251                      Color and Appearance Retention of Variegated Color Plastic Siding  
ASTM D7793                      Standard Specification for Insulated Siding  
ASTM D7856                      Color and Appearance Retention of Solid and Variegated Color Plastic Siding  
Products using CIELab Color Space  
FLTM BI 160-01                  Florida and Arizona Outdoor Exposure Test  
GM 9327P                          Outdoor Weathering of Automotive Exterior Materials  
(Withdrawn 2011)  
GMW14873;  
GM 9163P  
(Withdrawn 2006)  
ISO 877-1                          Plastics – Direct Weathering: General Guidance  
ISO 877-2                          Plastics – Direct Weathering: Exposure Behind Window Glass  
ISO 2810                          Paints and Varnishes: Natural Weathering  
LP463-KB19-01                  Outdoor Exposure of Trim Materials

**OUTDOOR ACCELERATED WEATHERING: AIM BOX TESTING**

GMW 14444                      Material Related Interior Part Performance  
GM 9538P                          Low Temperature Flexibility of Latex Sealants After Artificial Weathering  
(Superseded by GMW  
3417)

**OUTDOOR ACCELERATED WEATHERING: Q-TRAC TESTING**

ASTM D4364                      Performing Accelerated Outdoor Weathering of Plastics Using Concentrated  
Natural Sunlight  
ASTM D5105                      Performing Accelerated Outdoor Weathering of Pressure-Sensitive Tape  
Using Concentrated Natural Sunlight  
ASTM D5722                      Performing Accelerated Weathering of Factory Coated Embossed Hardboard  
Using Concentrated Natural Sunlight and a Soak-Freeze-Thaw Procedure  
ISO 877-3                          Plastics – Intensified weathering using concentrated solar radiation  
SAE J1961                          Accelerated Exposure of Automotive Exterior Materials Using a Solar  
Fresnel Reflector Apparatus

**WEATHERING AND CORROSION EVALUATIONS**

ASTM D610                          Evaluating Degree of Rusting on Painted Steel Surfaces  
ASTM D660                          Evaluating Degree of Checking of Exterior Paints  
ASTM D661                          Evaluating Degree of Cracking of Exterior Paints  
ASTM D662                          Evaluating Degree of Erosion of Exterior Paints  
ASTM D714                          Evaluating Degree of Blistering of Paints  
ASTM D772                          Evaluating Degree of Flaking (Scaling) of Exterior Paints  
ASTM D1654                      Evaluation of Painted or Coated Specimens to Corrosive Environments  
ASTM D1729                      Visual Evaluation of Color Difference of Opaque Materials  
ASTM D1925-70                  Test Method for Yellowness Index of Plastics  
(Withdrawn 1995)

ASTM D3274	Evaluating Degree of Surface Disfigurement of Paint Films by Microbial Growth or Dirt Accumulation
ASTM D4214	Evaluating the Degree of Chalking of Exterior Paint Films

### **WEATHERING AND CORROSION EVALUATIONS (CONT)**

ASTM E31	Calculating Yellowness and Whiteness Indices from Instrumentally Measured Color Coordinates
ASTM E1164	Spectrometric Data for Object Color Evaluation
ASTM E1331	Color by Spectrophotometry Using Hemispherical Geometry
ASTM E1348	Transmittance and Color by Spectrophotometry Using Hemispherical Geometry
ISO 3668	Paints And Varnishes -- Visual Comparison Of Colour Of Paints
ISO 4628 Part 1	Part 1 - General Introduction and Designation System
ISO 4628 Part 2	Part 2 - Assessment of Degree of Blistering
ISO 4628 Part 3	Part 3 - Assessment of Degree of Rusting
ISO 4628 Part 4	Part 4 - Assessment of Degree of Cracking
ISO 4628 Part 5	Part 5 - Assessment of Degree of Flaking
ISO 4628 Part 6	Part 6 - Assessment of Degree of Chalking by Tape Method
ISO 4628 Part 7	Part 7 - Assessment of Degree of Chalking by Velvet Method
ISO 4628 Part 8	Part 8 – Assessment of Degree of Delamination and Corrosion Around a Scribe or Other Artificial Defect
ISO 4628 Part 10	Part 10 - Assessment of Degree of Filiform Corrosion
SAE J1545	Instrumental Color Difference Measurement for Exterior Finishes, Textiles and Trim
SAE J1767	Instrumental Color of Automotive Trim Material

### **PHYSICAL AND MECHANICAL TESTING**

GMW 14829;	Tape Adhesion Test for Paint Finishes
GM 9071P	
(withdrawn 2005)	

### **FOR GENERAL TESTING (MULTIPLE DISCIPLINES) <sup>2</sup>**

AAMA 303 <sup>4</sup>	Specification for Rigid Poly (Vinyl Chloride) (PVC) Exterior Profiles
AAMA 305 <sup>4</sup>	Specification for Fiber Reinforced Thermoset Profiles
AAMA 307 <sup>4</sup>	Specification for Laminates Intended for Use on AAMA Certified Profile
AAMA 308 <sup>4</sup>	Voluntary Specification for Cellular Polyvinyl Chloride (PVC) Exterior Profiles
AAMA 613 <sup>4</sup>	Test Procedures For Organic Coatings on Plastic Profiles
AAMA 623 <sup>4</sup> , AAMA 624 <sup>4</sup> , AAMA 625 <sup>4</sup>	Test Procedures For Organic Coatings on Fiber Reinforced Thermoset Profiles
ASTM G147	Conditioning and Handling of Nonmetallic Materials for Natural and Artificial Weathering Tests

<sup>1</sup> This laboratory meets the A2LA P112 Flexible Scope Policy

<sup>2</sup> 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.

<sup>3</sup> Using customer-specified methods directly related to the types of tests listed above.

<sup>4</sup> The laboratory is accredited for the test methods listed above as it pertains to the limitations indicated on this parameter based Scope. The accredited test methods are used in determining compliance with any material specifications included on this Scope; however, the inclusion of these material specifications on this Scope does not confer laboratory accreditation to the material specifications. Inclusion of these material specifications on this Scope also does not confer accreditation for every method embedded within the specification.

<sup>+</sup> This test is not equivalent to that of a calibration.





## Accredited Laboratory

A2LA has accredited

### Q-LAB ARIZONA DESERT TESTING

Wittmann, AZ

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 4<sup>th</sup> day of November 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 0859.02  
Valid to September 30, 2026  
Revised April 25, 2025

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