



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Markland Industries, Inc.

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TESTING

Valid to: December 18, 2020

Certificate Number: AT-1250

Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Plating Thickness	ASTM B504, Kocour Manual GM 4374M ISO 2177 ISO 1463 ASTM B487 HES D6001-04A	Chrome Plated Aluminum, Steel and Plastic	Kucour Electronic Thickness Tester (0.075 to 50) μm Optical microscope
Nickel Electrochemical Potential	ASTM B764 GM 4374M	Chrome Plated Aluminum, Steel and Plastic	Kucour Electronic Thickness Tester with STEP Electrode (0 to 2 000) mV
CASS Test	ASTM B368 ASTM B537 GM 4476P, GM 4374M GMW 14458, ISO 9227 JIS H8502, NES M0158 HES D6001-04A	Chrome Plated Aluminum, Steel and Plastic	Type II Chamber, Singleton Type
Salt Spray	ASTM B117, ASTM B537 GM 4298 ISO 9227, JIS H8502	Chrome Plated Aluminum, Steel, and Painted Parts	Type II Chamber, Singleton Type
Corrodkote Test	ASTM B380	Chrome Plated Aluminum, Steel, and Painted Parts	Type II Chamber, Singleton Type
Adhesion of Metallic Coatings by Reverse Saw Test	ASTM B571, GM 264M Appendix A GM 4374M GMW 14668 GMW 14672	Chrome Plated Aluminum, Steel and Plastic	No separation between layers of plating or to base metal Band Saw



**Mechanical**

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Adhesion of Metallic Coatings by Heat-Quench Test	ASTM B571 GMW 14672 3.3.2.2 GMW 14668 GMW 14672	Chrome Plated Aluminum and Plastic Parts	No evidence of blistering / Convection Oven
Adhesion by Tape Test	ASTM D3359 Method A/B GMW 14829, GM 9071	Painted Parts	Cross Hatch Cutter Scribe No peeling or lifting
Water Resistance of Coatings in 100 % Relative Humidity	ASTM D2247, GM 4465P JIS Z8703 ASTM D1735	Painted and Plated Parts	Chamber Singleton Type II No peeling or blistering of paint
Pore Count (Dubpernell Test) in Electroplated Chromium	ASTM B456 Motic Images Plus Manual GM 4374M GMW 14668 ASTM B604	Chrome Plated Aluminum, Steel and Plastic	Accu-Scope Metallographic Microscope, Moticam 1000 digital camera, Motic Images Plus Image Analysis Software
Active Sites in Electroplated Chromium	ASTM B456 Motic Images Plus Manual GM 4374M	Chrome Plated Aluminum, Steel and Plastic	Accu-Scope Metallographic Microscope, Moticam 1000 digital camera, Motic Images Plus Image Analysis Software
Elongation Test	ASTM B456 ASTM B604	Copper Plated Aluminum, Steel and Plastic	Plated strip mandrel No cracking of plated coating
Performance of Painted Components	ES805-07011 (Harley-Davidson Standard)	Painted Parts	3M 898 tape Chamber Singleton Type II / No peeling or blistering of paint
Micrometer Bend Test	ASTM B490	Chrome Plated Aluminum, Steel and Plastic	Micrometer Plated test strips
Decorative Chromium Plated Plastic Part Testing requirements	GMW 14668 ASTM B604 WSS-M1P83-D1, D2, D3 PS-8810 M4063, M0132 GS 97017 TSH6504G DIN 53100 ES805-001 HES D6001-04A TM-0008F-M	Plated Plastic Parts	Oven, Freezer, Corrosion Chamber, Grind saw, Band saw Automatic Thermal Cycle Chamber No evidence of blistering, cracking or crazing
Stone chipping	ASTM D3170 GMW 14668 GMW 14700	Plated Plastic Parts	Gravelometer No plating separation from substrate and no blistering

**Mechanical**

<b>Specific Tests and/or Properties Measured</b>	<b>Specification, Standard, Method, or Test Technique</b>	<b>Items, Materials or Product Tested</b>	<b>Key Equipment or Technology</b>
Peel Strength	ASTM B533, Procedure B GMW 14668	Plated Plastic Parts	Force Gage HF200
Decorative Chromium Plated Metal Parts Testing Requirements	DIN 12540 ES805-001	Plated metal parts	Oven, Freezer, Corrosion Chamber, Grind saw, Band saw No evidence of blistering, Microscope, Kocour Tester

Note:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. AT-1250.



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Vice President