



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Markland Industries, Inc.

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TESTING

Valid to: December 18, 2016

Certificate Number: AT-1250

I. Mechanical

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Chrome Plated Aluminum, Steel and Plastic	Plating Thickness	ASTM B504-90, Kocour Manual GM 4374M ISO 2177 ISO 1463 ASTM B487 HES D6001-04A	Kucour Electronic Thickness Tester (0.075 to 50) μm Optical microscope (0.8 μm)
Chrome Plated Aluminum, Steel and Plastic	Nickel Electrochemical Potential	ASTM B764 GM 4374M	Kucour Electronic Thickness Tester with STEP Electrode (0 to 2 000) mV
Chrome Plated Aluminum, Steel and Plastic	CASS Test	ASTM B368 ASTM B537 GM 4476P, GM 4374M GMW 14458, ISO 9227 JIS H8502, NES M0158 HES D6001-04A	Type II Chamber, Singleton Type
Chrome Plated Aluminum, Steel, and Painted Parts	Salt Spray	ASTM B117, ASTM B537 GM 4298 ISO 9227, JIS H8502	Type II Chamber, Singleton Type
Chrome Plated Aluminum, Steel, and Painted Parts	Corrodkote Test	ASTM B380	Type II Chamber, Singleton Type
Chrome Plated Aluminum, Steel and Plastic	Adhesion of Metallic Coatings by Reverse Saw Test	ASTM B571-97, GM 264M Appendix A GM 4374M GMW 14668 GMW 14672	No separation between layers of plating or to base metal Band Saw
Chrome Plated Aluminum and Plastic Parts	Adhesion of Metallic Coatings by Heat-Quench Test	ASTM B571 GMW 14672 3.3.2.2 GMW 14668 GMW 14672	No evidence of blistering / Convection Oven

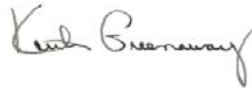


ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Painted Parts	Adhesion by Tape Test	ASTM D3359 Method A/B GMW 14829, GM 9071	Cross Hatch Cutter Scribe No peeling or lifting
Painted and Plated Parts	Water Resistance of Coatings in 100 % Relative Humidity	ASTM D2247, GM 4465P JIS Z8703 ASTM D1735	Chamber Singleton Type II No peeling or blistering of paint
Chrome Plated Aluminum, Steel and Plastic	Pore Count (Dubpernell Test) in Electroplated Chromium	ASTM B456 Motic Images Plus Manual GM 4374M GMW 14668 ASTM B604	Accu-Scope Metallographic Microscope, Moticam 1000 digital camera, Motic Images Plus Image Analysis Software
Chrome Plated Aluminum, Steel and Plastic	Active Sites in Electroplated Chromium	ASTM B456 Motic Images Plus Manual GM 4374M	Accu-Scope Metallographic Microscope, Moticam 1000 digital camera, Motic Images Plus Image Analysis Software
Copper Plated Aluminum, Steel and Plastic	Elongation Test	ASTM B456 ASTM B604	Plated strip mandrel No cracking of plated coating
Painted Parts	Performance of Painted Components under the sequence of Test Flow 1	ES805-07011 (Harley-Davidson Standard) Test Flow 1	3M 898 tape Chamber Singleton Type II / No peeling or blistering of paint
Chrome Plated Aluminum, Steel and Plastic	Micrometer Bend Test	ASTM B490	Micrometer Plated test strips
Plated Plastic Parts	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	Oven, Freezer, Corrosion Chamber, Grind saw, Band saw Automatic Thermal Cycle Chamber No evidence of blistering, cracking or crazing
Plated Plastic Parts	Stone chipping	ASTM D3170 GMW 14668 GMW 14700	Gravelometer No plating separation from substrate and no blistering
Plated Plastic Parts	Peel Strength	ASTM B533, Procedure B GMW 14668	Force Gage HF200

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Plated metal parts	Decorative Chromium Plated Metal Parts Testing Requirements	DIN 12540 ES805-001	Oven, Freezer, Corrosion Chamber, Grind saw, Band saw No evidence of blistering, Microscope, Kocour Tester

Notes:

1. * = As Applicable
2. This scope is part of and must be included with the Certificate of Accreditation No. AT-1250



Vice President

