



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

**ATRONA Test Labs, Inc.**  
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**TESTING**

Valid to: March 29, 2015

Certificate Number: AT-1119

**I. Mechanical**

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*DETECTION LIMIT/ RANGE/ EQUIPMENT
Metals and Metallic Components	<b>Metallographic Evaluation</b> Preparation Banding / Orientation of Microstructure Depth of Decarburization Macro / Microetch Inclusion Rating Grain Size Intergranular Corrosion Photomicrography / Light Microscopy Case Depth	ASTM E 3 ASTM E 1268 ASTM E 1077 ASTM E 340 & E 381, E 407 ASTM E 45 (Method A) ASTM E 112 ASTM A 262 (Practice A and E) ASTM E 883 SAE J423	All Metals
Metals and Metallic Components	Average Grain Size Using Semi-automatic and Automatic Image Analysis	ASTM E1382	All Metals
Ductile Iron and Ductile Iron Components	Determining Nodularity and Nodule Count Using Image Analysis	ASTM E2567	All Grades
Metals and Metallic Components	<b>Hardness Testing</b> Rockwell (A, B, C, N) Brinell (500 kg to 3 000 kg) Micro-hardness Vickers, Knoop, Leeb	ASTM E 18 ASTM E 10 ASTM E 384 ASTM A956	All Metals
Metals, Metallic Components, Systems and Assemblies	Failure Analysis	Utilizing Listed Test Technologies and MET-08	All Metals
Internal and External Threaded Fasteners, Washers and Rivets	Mechanical Testing	ASTM F606 ASTM F606M	120 000 lb Max Tension



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All Metals Carbon, low and high alloy steels, cast irons, tool steel, stainless steel, aluminum, copper, and nonferrous	Optical Emission Spectrochemical Analysis	ASTM E 415, E 1086, E 1251, E 1999	
Steel, Iron, Nickel and Cobalt	Infrared Absorption Carbon and Sulfur Analysis	ASTM E 1019 Method A	Carbon (0.005 to 4.5) % Sulfur (0.001 to 0.35) %
Automotive Seating Systems, Assemblies and Components, Structural Components and Assemblies and Stampings	High / Low Temperature Humidity	Customer-supplied or Lab-developed but Client-approved Test Methods	(-50 to 350) °F up to 99 % Relative Humidity
Automotive Seating Systems, Assemblies and Components, Structural Components and Assemblies and Stampings	Vibration Cold, Hot, Ambient	Customer-supplied or Lab-developed but Client-approved Test Methods	(1 to 60) Hz
Automotive Seating Systems, Assemblies and Components, Structural Components and Assemblies and Stampings	Durability Mechanical Cycling Life Cycle Testing Environmental Cycling	Customer-supplied or Lab-developed but Client-approved Test Methods	N/A
Automotive Seating Systems, Assemblies and Components, Structural Components and Assemblies and Stampings	Durability Axial and Bending Fatigue	Customer-supplied or Lab-developed but Client-approved Test Methods	120 000 lb max.
Automotive Seating Systems, Assemblies and Components, Structural Components and Assemblies and Stampings	Durability Ultimate Strength	Customer-supplied or Lab-developed but Client-approved Test Methods	120 000 lb max.
Automotive Seating Systems, Assemblies and Components, Structural Components and Assemblies and Stampings	Durability Data Acquisition	Customer-supplied or Lab-developed but Client-approved Test Methods	Multiple Inputs
All types of Metals, Components, and Assemblies	Salt Fog	ASTM B117, GMW3286	36 inches long part
All types of Metals, Components, and Assemblies	Water Fog	GM4465P	36 inches long part
Metal and Metallic Components	Cleanliness Evaluation	JDS-G169	All Metals
Metal and Metallic Components	Magnetic Particle Inspection	ASTM E1444	Ferrous Metals
Metal and Metallic Components	Liquid Dye Penitent Examination	ASTM E165	All Metals



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Metal and Metallic Components	Compression Testing	ASTM E9	120 000 lb max
Metal and Metallic Components	Elevated Temperature Tension Test	ASTM E21	120 000 lb max
Metal and Metallic Components	Notched Bar Impact Test (Charpy)	ASTM E23	Full Size and Sub-Size
Powder Metals	Determination of Density of Compacted and Sintered Powder Metallurgy (PM) Products	MPIF Standard 42	Mettler Balance and Density Kit
Metals, Wires, Rods, Fasteners, Plates, Plastics, Components, and Assemblies	Tensile Testing	ASTM A370, E8/E8M	Fasteners Grade 8 to 3/4" All tensile bar sizes by spec
Components, Fixtures, and Assemblies	Dimensional Inspection	Customer-supplied or Lab-developed but Client-approved Test Methods	Up to 28x40x24 in ± 0.000004 in
Fasteners, Components, and Assemblies	Torque Testing	Customer-supplied or Lab-developed but Client-approved Test Methods	Up to 20 000 ft-lb
Fasteners, Components, and Assemblies	Surface Discontinuity	ASTM F788/F788M, F812/F812M	Visual and microscopic
Fasteners, Components, and Assemblies	Carburization and Decarburization	ASTM F2328, F2328M	Microscopic and micro-hardness
Coating properties of component parts	Water Resistance of Coatings	ASTM D2247	24 in max
Coating properties of component parts	Tape Adhesion	GM9071P	
Plating properties of component parts	Plating Thickness	GMW4205, GMW4700	Microscope
Automotive Seating Systems, Assemblies and Components, Structural Components and assemblies and Stampings	Effort Testing	Using Customer Supplied Test Methods or Methods Developed By the Lab and Approved by the Client directly related to tests listed	Efforts (hand) up to 110 lb Efforts (machine) up to 120 000 lb



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Automotive Seating Systems, Assemblies and Components, Structural Components and assemblies and Stampings	Chuck and Deflection	Using Customer Supplied Test Methods or Methods Developed By the Lab and Approved by the Client directly related to tests listed	Chuck to 4 in Deflection Load to 110 lb
Organic and Inorganic Solids, Liquids and Gases	Material Identification	ASTM E1252 ASTM D3677 ASTM E204 ASTM E334	Infrared Spectrometer
Organic and Inorganic Solids, Liquids and Polymers	Enthalpies of Fusion, Crystallization, Melting Temperature, Glass Transition Temperature, Oxygen Index	ASTM D3418 ASTM E793 ASTM E794 ASTM E1356 ASTM D3895 ASTM D2863	Differential Scanning Calorimeter
Organic and Inorganic Solids, and Polymers	Material Composition, Volatile Materials, Combustion, Ash, Filler Content Carbon Black	ASTM E1131 ASTM D1603	Thermogravimetric Analyzer
Organic and Inorganic Solids, and Polymers	Glass Transition CTE	ASTM E831	Thermal Mechanical Analyzer
Polymers, Plastics and Composites	Ash Content	ASTM D482 ASTM D5630	High Temperature Furnace
Polymers	Melt Flow Rate	ASTM D1238	Tinius Olsen Flow Indexer
Organic and Inorganic Solids	Density Specific Gravity	ASTM D792	Precision Balance
Polymers	Durometer Hardness	ASTM D2240	Durometer A and D
Polymers	Hardness Rockwell R, L and M	ASTM D785	Hardness Tester
Polymers	Tensile Properties	ASTM D412 ASTM D638 ASTM D882	Thermoplastic Elastomers, Thin Plastic Sheeting
Polymers	Tear Resistance Properties	ASTM D624 ASTM D1004	Thermoplastic Elastomers, Plastic Film and Sheeting



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Polymers	Flexural Modulus	ASTM D5	All non-metals
Polymers	Water Absorption of Plastics	ASTM D570	Mettler Balance and Oven

**Notes:**

1. \* = As Applicable
2. This scope is part of and must be included with the Certificate of Accreditation No. AT-1119




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Vice President

