

Mechanical Test Laboratory Price List

Note: Minimum charge of \$100 per invoice.

Tests requiring machining, sample preparation, fixturing, or significant setup time will be charged by the hour at applicable rates plus materials costs. An estimate will be given upon receipt of samples.

Quantities of 10 or more of a specific test may be eligible for a volume discount. This will be determined based upon the nature of the samples and test.

Our regular turn-around time is 5 business days.

For RUSH orders, add a minimum of 50% dependant on timing and nature of work.

Our laboratory is accredited by the Standards Council of Canada (SCC) to ISO/IEC 17025 for specific tests as indicated by ✓. Our Scope of Accreditation is listed on the Standards Council of Canada website at http://palcan.scc.ca/specs/pdf/22_e.pdf



Metallic Materials			
Tension & Compression			
Tensile	✓	ASTM E8	Metallic Materials
		ASTM A370	Steel Products
		CSA G40.20/-21	Rolled or welded structural quality steel/ Structural quality steel
	✓	ASTM B557	Wrought and Cast Aluminum- and Magnesium- Alloy Products
Rebar Tensile		CSA 30.18	Billet-Steel Bars for Concrete Reinforcement
		CSA W186	Welding of Reinforcing Bars in Reinforced Concrete Construction
Wire Tensile		ASTM A370	Steel Products
	✓	ASTM B557	Wrought and Cast Aluminum- and Magnesium- Alloy Products
Weld Tensile	✓	CSA W47.1	Fusion Welding of Steel
	✓	CSA W47.2	Fusion Welding of Aluminum
	✓	ASME IX QW-150	Welding General Requirements - Tension Tests
	✓	ASME IX QB-150	Brazing General Requirements - Tension Tests
		AWS D1.1	Structural Welding Code - Steel
	AWS D1.2	Structural Welding Code - Aluminum	

Steel Chain Tensile	ASTM A413	Carbon Steel Chain	\$110 ea
	ASTM A466	Weldless Chain	
	ASTM A467	Machine and Coil Chain	
Roller Chain Tensile	Custom	Ultimate load of Chain	\$105 ea
Fastener Proof Load & Tensile	ASTM F606	Externally and Internally Threaded Fasteners, Washers, Direct Tension Indicators, and Rivets	\$105 ea
	SAE J429	Externally Threaded Fasteners	
	SAE J1199	Metric Externally Threaded Steel Fasteners	
	SAE J1216	Metric Threaded Fasteners (Cancelled Jul 1999)	
	SAE J995	Steel Nuts	
	Custom	Standard or customs test available	

Bending & Ductility

Weld Bend	✓ CSA W47.1	Fusion Welding of Steel	\$55 ea
	✓ CSA W47.2	Fusion Welding of Aluminum	
	✓ ASME IX QW-160	Welding General Requirements - Guided Bend Tests	
	✓ ASME IX QB-160	Brazing General Requirements - Guided Bend Tests	
Fillet-Weld Bend	✓ CSA W47.1	Fusion Welding of Steel	\$65 ea
	✓ CSA W47.2	Fusion Welding of Aluminum	
	✓ ASME IX QW-180	Welding General Requirements - Fillet-Weld Tests	
Torsional Ductility of Wire	ASTM A938	Torsion Testing of Wire	\$75 ea \$540 / set of 10

Impact

Charpy	✓ ASTM E23	Notched Bar Impact Testing of Metallic Materials - Typically 3 specimens	For prenotched specimens: \$40 each \$85 / set of 3 \$120 / set of 5	
	✓ ASME VIII UCS-67	Rules for Construction of Pressure Vessels Division 1 - Impact Testing of Welding Procedures - Typically 3 specimens		
	✓ CSA W47.1	Fusion Welding of Steel - Typically 5 specimens		
	✓ ASTM A370	Steel Products - Number of specimens TBD		
	CSA G40.20/-0.21	Rolled or Welded Structural Quality Steel/ Structural Quality Steel - Number of specimens TBD		
	AWS D1.1	Structural Welding Code – Steel - Typically 3 or 5 specimens		
	✓ Option	Specimen Type A Vee notch (with broach)		\$5 ea
	Vertical Impact	Custom		Standard or customs test available

Hardness

Rockwell Hardness	✓	ASTM E18	Rockwell Hardness of Metallic Materials	\$60 ea
		ASTM F606	Externally and Internally Threaded Fasteners, Washers, Direct Tension Indicators, and Rivets	
		SAE J429	Externally Threaded Fasteners	
		SAE J1199	Metric Externally Threaded Steel Fasteners	
		SAE J1216	Metric Threaded Fasteners (Cancelled Jul 1999)	
Brinell Hardness	✓	ASTM E10	Brinell Hardness of Metallic Materials	\$60 ea
	✓	ASTM E110	Indentation Hardness of Metallic Materials by Portable Hardness Testers	
Barcol Hardness		ASTM D2583	Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor	\$60 ea
Vickers - Hardness	✓	ASTM E384 ASTM E92	Microindentation Hardness of Materials	\$145 ea
Profile Hardness	✓	ASTM E384	Microindentation Hardness of Materials	\$180 ea
Case Depth	✓	ASTM E384	Microindentation Hardness of Materials	\$180 ea

Plastics, Resins, Rubbers, & Composite Materials

Tension & Compression

Plastics, Resins, & Composites Tensile	✓	ASTM D638	Tensile Properties of Plastics	\$80 ea
	✓	ASTM D3039	Tensile Properties of Polymer Matrix Composite Materials	\$80 ea
		Option	Strain Gauging (1 - 3 Quarter-Bridge gauges)	\$85 / gauge
Rubber Tensile		ASTM D412	Vulcanized Rubber and Thermoplastic Elastomers—Tension	\$80 ea
Flatwise Tensile		ASTM C297	Flatwise Tensile Strength of Sandwich Constructions	\$100 ea
Plastics, Resins, & Composites Shear	✓	ASTM D7078	Shear Properties of Composite Materials by V-Notched Rail Shear Method	\$120 ea
		Option	Strain Gauging (1 - 2 Shear Half-Bridge gauges)	\$110 / gauge
Rubber Peel Adhesion		ASTM D413	Rubber Property—Adhesion to Flexible Substrate	\$85 ea
		ASTM D429	Rubber Property—Adhesion to Rigid Substrates	\$85 ea
Compression	✓	ASTM D6641	Compressive Properties of Polymer Matrix Composite Materials Using a Combined Loading Compression (CLC) Test Fixture	\$120 ea
		Option	Strain Gauging (1 - 3 Quarter-Bridge gauges)	\$85 / gauge

Flexural

Flexural - 3 Point	✓	ASTM D790	Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials	\$85 ea
		ASTM C393	Core Shear Properties of Sandwich Constructions by Beam Flexure	\$100 ea

Flexural - 3 Point Short Beam Shear	ASTM D2344	Short-Beam Strength of Polymer Matrix Composite Materials and Their Laminates	\$100 ea
Flexural - 4 Point	ASTM D6272	Flexural Properties of Plastics and Electrical Insulating Materials by Four-Point Bending	\$90 ea

Hardness

Durometer Hardness	ASTM D2240	Rubber Property—Durometer Hardness	\$60 ea
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Adhesives, Coatings & Environmental

Physical Tests

Peel Adhesion - 180deg	ASTM D903	Peel or Stripping Strength of Adhesive Bonds	\$100 ea
Peel Adhesion -Tee	ASTM D1876	Peel Resistance of Adhesives (T-Peel Test)	\$100 ea
Lap Shear	ASTM D3163	Strength of Adhesively Bonded Rigid Plastic Lap-Shear Joints in Shear by Tension Loading	\$80 ea
	✓ ASTM D3164(M)	Strength Properties of Adhesively Bonded Plastic Lap-Shear Sandwich Joints in Shear by Tension Loading	
	ASTM D1002	Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal)	
	ASTM D5868	Lap Shear Adhesion for Fiber Reinforced Plastic (FRP) Bonding	
Galvanized Coating - on Wire	ASTM B498	Zinc-Coated (Galvanized) Steel Core Wire for Use in Overhead Electrical Conductors	\$75 ea

Temperature and Humidity Exposure

Programmable Environmental	Small	190°C to -73°C 10%RH to 95%RH 30" x 30" x 30" Chamber	\$150 / 8 hr † \$200 / 24 hr †
	Medium	190°C to -73°C 10%RH to 95%RH 38" x 38" x 38" Chamber	\$1100 / week †
	Large	60°C to -40°C 10%RH to 80%RH 60" x 83" x 86" Chamber	

Ultraviolet (UV) Exposure

Xenon-Arc	ASTM G155	Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials	\$5.00 / hr for 500 hours or less † \$3.50 / additional hour
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Corrosion Chamber

Salt Fog / Spray	ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus	\$3.50 / hr for 500 hours or less † \$2.75 / additional hour
	ASTM B368	Copper-Accelerated Acetic Acid-Salt Spray (Fog) Testing (CASS Test)	\$4.00 / hr †

Coating Testing Options

Scribe Evaluation	ASTM D1654	Evaluation of Painted or Coated specimens Subjected to Corrosive Environments	\$30 ea
Coating Thickness	ASTM D7091	Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals	\$20 ea
Pencil Hardness	ASTM D3363	Film Hardness by Pencil Test	\$30 ea
Tape Adhesion	ASTM D3359	Measuring Adhesion by Tape Test	\$30 ea
Paint Blistering Evaluation	ASTM D714	Evaluating Degree of Blistering of Paints	\$20 ea
Rust Evaluation	ASTM D610	Evaluating Degree of Rusting on Painted Steel Surfaces	\$20 ea
Gravelometer	SAE J400	Test for Chip Resistance of Surface Coatings	\$20 ea

Product Testing & Verification

Fatigue / Cycle Testing Load or Displacement Control	Small	1,000 lbf tension or compression	\$25 / hr †
	Mechanical	10 inch travel	\$120 / 8 hr †
	Disp. Control Only	Cycle rates up to 6 Hz	\$200 / 24 hr †
	Medium	22 klbf tension or compression	\$55 / hr †
	Servo-Hydraulic	10 inch travel	\$375 / 8 hr †
			Cycle rates up to 6 Hz
Flammability - Vehicle Interior Materials	Large	55 klbf tension or compression	
	Servo-Hydraulic	5 inch travel	
		Cycle rates up to 4 Hz	
Flammability - Vehicle Interior Materials	FMVSS 302	Flammability of Interior Materials	\$260 ea
	SAE J369	Flammability of Polymeric Interior Materials--Horizontal Test Method	
Bus Window Push Out	FMVSS 217	Bus Emergency Exits and Window Retention and Release	\$350 ea
	571.217	Bus Emergency Exits and Window Retention and Release	
Spring Constant	Custom	Tension or Compression Springs	\$115 ea

Load vs. Deflection Curve	Custom		\$110 ea
Webbing Load	Custom	Tension Test to Failure	\$110 ea
Jack, Jackstand, Hoist Proof Load	Custom	Validate Load Bearing Capabilities	\$260 ea
Loading Ramp Proof Load	Custom	Validate Load Bearing Capabilities	\$260 ea
Anchor Proof Load	Custom	Validate Load Bearing Capabilities	\$250 - \$1000 ea
Hitch Proof Load	SAE J684	Trailer Couplings, Hitches, and Safety Chains-- Automotive Type	\$100 - \$1000 ea
Winch Pulling Load	SAE J706	Validate Load Rating Capabilities	\$1500 ea
Gas Strut Load vs. Deflection	Custom	Validate damping, load holding and cyclic life testing	\$120 ea
Shock Load vs. Deflection	Custom	Validate damping, load holding and cyclic life testing	\$120 ea
Load Simulation	Custom	Apply to test object	\$100 - \$500 ea
Cabinetry Stain	KCMA - 9.0	Finish Test	\$150 - \$450 ea
Rubber Tarp Strap Load	Custom	Ultimate Load Testing	\$120 ea
Headlight Illumination ††	FMVSS 108	Lamps, Reflective Devices, and Associated Equipment	\$1500 - \$3000 / vehicle
	CMVSS 108	Lamps, Reflective Devices, and Associated Equipment	
	FMVSS 571.108	Lamps, Reflective Devices, and Associated Equipment	
	SAE J1383	Performance Requirements for Replaceable Bulb Motor Vehicle Headlamps	
	SAE J1735	Harmonized Vehicle Headlamp Performance Requirements	
Strain Gauging	Custom	Strain Gauging and Measurement	\$200 +

† The rates quoted are run-time rates. Initial setup and project management costs will depend upon the nature of the test.

†† The rates quoted are estimates – this test is a custom test that can vary depending upon setup and measurement arrangement.

Subject to ITC's General Terms and Conditions.
All terms and prices shown are subject to change without notice.