



ANSI-ASQ National Accreditation Board

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005 & ANSI/NCSL Z540-1-1994

Quality Engineering Service of the Chippewa Valley, Inc.

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TESTING and CALIBRATION

Valid to: September 22, 2018

Certificate Number: ACT-1189

I. Mechanical Testing

Field of Test	Items, Materials or Products Tested	Specific Tests or Properties Measured	Specification, Standard Method or Technique Used	*Detection Limit / Range/ Equipment
Push Test	Plastic Fasteners, Screws, Adhesives, 3-D objects within equipment operational range	Tensile, Shear	CUP-T1001-A	Up to 1 000 lb Lloyd Type B
Push Test	Plastic Fasteners, Screws, Adhesives, 3-D objects within equipment operational range	Tensile, Shear	CUP-T1002-A	Up to 1 000 lb Lloyd Type B
Pull Test	Plastic Fasteners, Screws, Adhesives, 3-D objects within equipment operational range	Tensile, Shear, Elongation, Breaks	CUP-T1002-A	Up to 1 000 lb Lloyd Type B
Pull Test	Plastic Fasteners, Screws, Adhesives, 3-D objects within equipment operational range	Tensile, Pluck, Elongation, Breaks	CUP-T1004-A	Up to 1 000 lb Lloyd Type B
Shear Test	Plastic Fasteners, Screws, Adhesives, 3-D objects within equipment operational range	Shear, Elongation, Breaks, Adhesion Strength	CUP-T1003-A	Up to 1 000 lb Lloyd Type B
Shear Test	Plastic Fasteners, Screws, Adhesives, 3-D objects within equipment operational range	Shear, Elongation, Breaks, Adhesion Strength	CUP-D1002-A	Up to 1 000 lb Lloyd Type B
Torque Testing	Screws, Grommets, Bolts	Strip Torque, Drive Torque, Torsional Strength	CUP-F.I.P 1000-A	Up to 300 in-lb Torque Wrench, Type B Tolerance ± % of Reading
Ductility Testing	Screws & Bolts	Ductility Testing	CUP-F.I.P 1000-A	Empirical Observation for Pass / Fail
Drive Test	Screws & Bolts	Drive Test	CUP-F.I.P 1000-A	Empirical Observation for Pass / Fail



Field of Test	Items, Materials or Products Tested	Specific Tests or Properties Measured	Specification, Standard Method or Technique Used	*Detection Limit / Range/ Equipment
Part Weighing	3-D objects within equipment operational range	Part Weights	RFM-0025-1	Up to 310 g ± .0036 g

II. Dimensional Inspection

Parameter/ Equipment	Range	Calibration and Measurement Capability [Expressed as Uncertainty(±)]	Reference Standard or Equipment	Method(s)
Dimensional 1D	Up to 6 in (6 to 60) in	730 μin 910 μin	Caliper	Blue Print or Customer Specification
Dimensional 1D	Up to 16 in	740 μin	Height Gage	Blue Print or Customer Specification
Dimensional 1D	Up to 6 in	730 μin	Length Gage	Blue Print or Customer Specification
Dimensional 1D	Up to 2 in	96 μin	Micrometer	Blue Print or Customer Specification
Dimensional 1D	Up to 6 in	130 μin	Depth Micrometer	Blue Print or Customer Specification
Dimensional 1D	Up to 1 in (1 to 2) in	93 μin 95 μin	Drop Indicator	Blue Print or Customer Specification
Dimensional 1D	Up to 0.003 in	77 μin	Test Indicator	Blue Print or Customer Specification
Dimensional 1D	(0.011 to 0.6255) in	580 μin	Pin Gages	Blue Print or Customer Specification
Dimensional 1D	Up to 14 in	130 μin	Gage Blocks	Blue Print or Customer Specification
Dimensional 1D	(0.01 to 0.5) in (0.5 to 13) mm	2900 μin 73 μm	Radius Gages	Blue Print or Customer Specification
Dimensional 1D	Up to 0.5 in Radius: Up to 0.5 in Angular: 90 °	2900 μin 0.036 inches 1.6 °	Handheld Microscope (7x)	Blue Print or Customer Specification
Dimensional 2D	Up to 14 in Dia. & Radius : Calculated Angular : 360 °	460 μin 0.19 °	Optical Comparator	Blue Print or Customer Specification
Dimensional 2D	Up to 4 in Radius : 3 mm Angular : 360 °	490 μin 0.12 mm 0.11 °	Measuring Microscope	Blue Print or Customer Specification

Parameter/ Equipment	Range	Calibration and Measurement Capability [Expressed as Uncertainty(±)]	Reference Standard or Equipment	Method(s)
Dimensional 2D	Up to 1 in	43.0 μin	Laser Micrometer	Blue Print or Customer Specification
Dimensional 3D	X & Y = Up to 12 in Z = Up to 6 in Volumetric : Calculated Angular : 360 °	110 μin 110 μin 0.0059 °	Video Measuring System	Blue Print or Customer Specification
Dimensional 3D	X & Y = Up to 20 in Z = Up to 16 in Volumetric : Calculated Angular : 360 °	270 μin 170 μin 0.065 °	Brown & Sharpe Coordinate Measuring Machine	Blue Print or Customer Specification
Dimensional 3D	X & Y = Up to 40 in Z = Up to 24 in Volumetric : Calculated Angular : 360 °	45 μin 45 μin 0.0042 °	Coordinate Measuring Machine – Zeiss Contura G2 Scanning	Blue Print or Customer Specification
Dimensional Visual Comparison	Pitches UNC (4 to 84)	Nearest 2 teeth per Inch	Screw Pitch Gage	Blue Print or Customer Specification

III. Dimensional Calibration

Parameter/ Equipment	Range	Calibration and Measurement Capability [Expressed as Uncertainty(±)]	Reference Standard or Equipment	Method(s)
Calipers	Up to 60 in	(590 + 25L) μin	Caliper Calibration Set Gage Blocks	Cal-001
Height Gages	Up to 20 in	(600 + 9.3L) μin	Gage Blocks	Cal-001
Length Gages	Up to 20 in	(590 + 25L) μin	Gage Blocks	Cal-001
Micrometers (ID, OD, Depth)	Up to 12 in	(91 + 3.1L) μin	Gage Blocks	Cal-002 Cal-017 Cal-020
Drop or Dial Indicators	(0.0001 to 6) in	(91 + 1.6L) μin	Gage Blocks	Cal-003
Test Indicators	(0.0001 to 0.100) in	77 μin	Gage Blocks	Cal-004

Parameter/ Equipment	Range	Calibration and Measurement Capability [Expressed as Uncertainty(±)]	Reference Standard or Equipment	Method(s)
Radius Gages	Up to 10 in	110 μin	Video Measurement System	Cal-013
Protractors	Up to 180 °	0.0059 °	Angle Blocks	Cal-015
Pin Gages	(0.010 to 1.000) in	(43 - .80L) μin	Laser Micrometer	Cal-018
Thickness Gages & Other Fixed Gages Report of Values Only	Up to 2.0 in Up to 12 in Up to 360 ° Up to 20 in / Up to 360 ° Up to 40 in Up to 360 °	96 μin 110 μin 0.0059 ° 260 μin 0.065 ° (21 + 1.3L) μin 0.00042 °	High Accuracy Digital Indicator Video Measurement System Coordinate Measuring Machine – Manual Brown & Sharp Coordinate Measuring Machine – Zeiss Contura G2	Cal-014, Cal-019 Cal-020 & Cal-014
Gage Blocks	Up to 40 in	(21 + 1.3L) μin	Coordinate Measuring Machine – Zeiss Contura G2 Gage Block Comparison Indicator	Cal-020
Steel Rules	Up to 36 in	2 900 μin	Microscope Handheld / Master Steel Rule	Cal-016
Coordinate Measuring Machines	Up to 48 in	45 μin	CMM Calibration Gage Blocks Spherical Ball Bar	Cal-022 ASME B89.4.1-1997

IV. Mechanical Calibration

Parameter/ Equipment	Range	Calibration and Measurement Capability [Expressed as Uncertainty(±)]	Reference Standard or Equipment	Method(s)
Scales & Balances	Up to 600 g	.0036 g	Calibration Weight Set	Cal-021

Notes :

1. = As Applicable
2. Calibration and Measurement Capabilities represent expanded uncertainties at approximately the 95% confidence level using a coverage factor of $k=2$.
3. This laboratory offers commercial calibration, dimensional, functional testing and documentation services.
4. The term L represents length in inches.
5. This scope is formatted as part of a single document including the Certificate of Accreditation No. ACT - 1189



Vice President

