

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

FASTENAL COMPANY LABORATORY - TAIWAN¹
434 Gangshan Road, 5th Floor, Suite D
Gangshan District, Kaoshiung City, TAIWAN 820 R.O.C.
Brad Partington Phone: 507 453 8163
Matt Chen Phone: 886 7 621 3309

MECHANICAL

Valid To: September 30, 2016

Certificate Number: 1046.03

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location listed above *as well as the satellite laboratory location listed below* to perform the following fastener tests on steel and stainless steel:

<u>Test</u>	<u>Test Methods</u>
Hardness (Rockwell: A, BW, C, 15N, 30N)	ASTM A370, E18, F606, F606M; ISO 898-1, 898-2
Micro Hardness (100, 300 & 500g) Vickers Hardness (10 & 30kgs)	ASTM E384
Stress Durability (Hydrogen Embrittlement)	ASME B18.6.4; FIP 1000; SAE J78, J81
Decarburization	ASTM F835, F835M, F912, F912M, F2328, F2328M; ISO 898-1, 898-5; SAE J121, J121M, J419
Torsional Strength	SAE J78, J81, J933
Hex Socket Strength	ASTM F880, F880M, F912, F912M; ISO 898-5
Ductility	ASME B18.6.4; FIP 1000; ISO 7085; SAE J78, J81
Plating Thickness (Zn/Fe, Ni/Fe)	ASTM B568
Case Depth	ISO 2702, 7085; SAE J78, J81, J423, J933
Torque Tension	ASME B18.16.6; DIN 267-15; IFI 101, 100/107; ISO 2320
Drive Torque	FIP 1000; SAE J81
Drive Test	FIP 1000; SAE J81, J933

TestTest Methods

Drill Drive

DIN 7504; SAE J78

Wobble

ASME B18.6.4

Coating Thickness

ASTM B487

Discontinuities

ASTM A574, A574M, F788/788M, F812, F912/F912M;
DIN 267-19; ISO 6157-1 to -3;
SAE J122, J123, J1061I. Dimensional Testing²

Parameter	Range	CMC ³ (±)	Technique/ Method
Threads ⁴	#4 to 1-1/2 in M4 to M36	N/A N/A	Rings / System 21; ASME B1.1, B1.3, B1.16M
	#4 to 2 in M3 to M36	N/A N/A	Plug gages / System 21; ASME B1.1, B1.3, B1.16M
	1/8" – 2" NPT	N/A	Ring and Plug Gages / System 21; ASME B1.20.1
	3/4 – 1-3/4" ACME	N/A	Ring Gages / 2G; ASME B1.5
	1/8" – 1" NPTF	N/A	Ring –Plug Gages / Class 1; ASME B1.20.5
Linear ⁴ - 1D	Up to 2 in	0.0007 in	Outside micrometers / MIL-STD-120
	Up to 24 in	0.0013 in	Calipers / MIL-STD-120
	Up to 12 in	0.0012 in	Length gage / MIL-STD-120
	Up to 1 in	0.0004 in	Digital indicator / ASME B18.2.1
	Up to 30 ft	0.0079 in	Tape / MIL-STD-120
	(1/16 to 1/2) in	N/A	Cylinder ring / ASME B18.8.2
	x axis: Up to 6.9 in y axis: Up to 2.8 in	0.0008 in 0.0006 in	Optical comparators / MIL-STD-120
- 2D			

Parameter	Range	CMC ³ (±)	Technique/Method
Linear ⁴ - 3D	x axis: Up to 11 in y axis: Up to 7 in z axis: Up to 7 in	0.0002 in 0.0002 in 0.0009 in	Optical CMM / QA7T-87 (Zoomscope)
Angle ⁴	0° to 360° 0° to 360°	13' 12'	Optical comparators / MIL-STD-120 Optical CMM / QA7T-87 (Zoomscope)
Radii ⁴	Up to 0.50 in Up to 3 in	0.006 in 0.0003 in	Optical comparators / MIL-STD-120 Optical CMM / QA7T-87 (Zoomscope)
Recesses ⁴	Pin Pozi: #1 to 4 Phillips: #1 to 4 Square: #1 to 4 Hex Socket: (0.0028 to 0.375) in (1.3 to 10.0) mm 6 Lobe T10 to T30	0.0004 in	Recess penetration / ASME B18.6.3, B18.6.4, Recess penetration / B18.3, B18.3.1.M; ISO 10664; DIN 912 Recess penetration / ISO 10664
Flat Head ⁴	#2 to 3/8 in	0.0015 in	Protrusion gage / ASME B18.6.3, B18.6.4
Twist Test on S/P Lock Washer ⁴	Up to 1 in	N/A	ASME B18.21.1
Straightness ⁴	Up to 1 in	0.002 in	Straightness gage / ASME B18.2.1; IFI 138
Slot Width ⁴	M2 to M10 #2 to 3/8 in	N/A	Slot plug gage / ASME B18.6.4, B18.6.3; FIP 1000

¹ This accreditation covers testing performed at the main laboratory listed above, and the following satellite laboratory listed below.

² Commercial dimensional testing service is sometimes available for this laboratory.

³ Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine measurements of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific measurement performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific measurement.

⁴ This test is not equivalent to that of a calibration.

FASTENAL COMPANY LABORATORY - TAIWAN
No. 10-5, 13 Alley, 132 Lane, Zhu Wei Bei Street
Gangshan District, Kaoshiung City 820
Taiwan, R.O.C.

<u>Test</u>	<u>Test Methods</u>
Tensile (Axial, Wedge, Tension), Yield Strength, Elongation & Reduction of Area Proof (Internal / External Threaded) Bolts	ASTM A370 (A3.2, 13.2.1), F606, F606M (3.4, 3.5, 3.6); DIN 267-11; ISO 898-1 (9.1, 9.2, 9.5, 9.7) ASTM A370 (A3.2.1.2), F606, F606M (3.2.3); ISO 898-1 (9.6)
Nuts	ASME B18.6.4; ASTM F606, F606M (4.2); IFI 100/107; ISO 898-2 (8.1)
Double Shear	ASME B18.8.2
Salt Spray	ASTM B117



Accredited Laboratory

A2LA has accredited

FASTENAL COMPANY LABORATORY - TAIWAN

Gangshan District, Kaoshiung City, Taiwan

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).



Presented this 25th day of November 2014.

A handwritten signature in black ink, reading 'Peter M. Meyer'.

President & CEO
For the Accreditation Council
Certificate Number 1046.03
Valid to September 30, 2016

For the tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.