



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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MECHANICAL

Valid To: September 30, 2020

Certificate Number: 1046.05

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following fastener tests on steel and stainless steel:

<u>Test</u>	<u>Test Method(s)</u>
Hardness Rockwell: B, C, 30N	ASTM A370, E18, F606, F606M; ISO 898-1, 898-2
Leeb Hardness	ASTM A956
Microhardness Vickers (300g, 500g)	ASTM E384
Stress Durability (Twist Test for Split Lock Washer and Flat Press Test for Lock Washer)	ASME B18.21.1
Tensile (Axial & Wedge) Elongation and Reduction of Area	ASTM A370 (A3.2); ISO 898-1 (9.1, 9.2, 9.7), 3506-1
Double Shear	ASME B18.8.2 Appendix B
Proof Load Bolts	ASTM A370 (A3.2.1.2), F606 (3.2.1); ISO 898-1 (9.6)
Nuts	ASTM A962 (11.1), F606 (4.2); DIN 267 Part 4, Part 15; ISO 898-2 (8.1); SAE J995 (5.1)
Torque Prevailing Torque	DIN 267 Part 15
Torsional Strength	SAE J78, J933
Charpy Impact Strength	ASTM A370, E23; ISO 148-1

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Decarburization	ASTM F835, F912, F2328; ISO 898-1, 898-5; SAE J121, J419
Case Depth	SAE J423
Discontinuity (External Thread Acceptance)	ASTM F788, F788M
Salt Spray	ASTM B117, ISO 9227
Plating Thickness	ASTM B499
XRF PMI Analyzer	Niton Alloy Analyzer User's Guide

I. Dimensional Testing<sup>1</sup>:

Parameter	Range	CMC <sup>2</sup> (±)	Technique / Method
Threads <sup>3</sup>	#3 to 2 in M2.5 to M27	N/A	Rings /System 21 ASME B1.3M, ASME B1.16M
	Up to 2 in	0.00083 in	Pitch micrometer/ System 22 ASME B1.3M
	#4 to 1-1/2 in M3 to M27	N/A	Plug gages /System 21 ASME B1.3M, ASME B1.16M
	1/2 in to 2 in ACME		Ring Gages/ 2G; ASME B1.5
	1/4 in to 3/4 in NPT L1		Ring Gages/ Class 1; ASME B1.20.5
	Up to 2 in	.0035 in	Three-Wires ASME B1.5
Linear <sup>3</sup> - 1D	Up to 3 in	0.00016 in	Outside micrometers
	Up to 6 in	0.0015 in	Calipers
	Up to 2 in	0.00065 in	Digital indicator /ASME B18.2.1
	Up to 12 in	0.0014 in	Length gage
	Up to 24 in	0.0017 in	Height gage

Parameter	Range	CMC <sup>2</sup> (±)	Technique / Method
Linear <sup>3</sup> – 2D	x axis: Up to 11.77 in y axis: Up to 7.87 in	0.00074 in 0.00081 in	Video measurement / QA7M-114
Angle <sup>3</sup>	0° to 180°	0.09°	Video measurement / QA7M-114
Radii <sup>3</sup>	Up to 3 in	14 µm	Video measurement / QA7M-114
Recess Penetration <sup>3</sup>	Hex: 5/64 to 3/8 in 2 to 10 mm Philips: #1, #2, #3 Slot Pin Torx (6-lobe): T-20 – T-40 Square: #00 – #4	0.0020 in	Recess penetration gage / ASME B18.6.3, B18.6.4
Wobble <sup>3</sup>	Phillips #2, #3	0.58°	Wobble gage / ASME B18.6.4
Flat Head <sup>3</sup>	Up to 3/8 in	0.00065 in	Protrusion gage / ASME B18.6.3, B18.6.4

<sup>1</sup>Commercial dimensional testing service is sometimes available for this laboratory.

<sup>2</sup>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. CMC's 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.

<sup>3</sup> This test is not equivalent to that of a calibration.



## *Accredited Laboratory*

A2LA has accredited

# **FASTENAL COMPANY LABORATORY-MALAYSIA**

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 April 2017).



Presented this 21<sup>st</sup> day of November 2018.

A handwritten signature in black ink, written over a horizontal line.

President and CEO  
For the Accreditation Council  
Certificate Number 1046.05  
Valid to September 30, 2020

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