



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

FASTENAL COMPANY LABORATORY
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MECHANICAL

Valid To: September 30, 2016

Certificate Number: 1046.01

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 Methods</u>
<u>Mechanical Testing</u>	
Charpy Impact Strength	ASTM E23
Drill Drive	SAE J78
Drill Test	SAE J81, J933
Ductility	ASME B18.6.4; FIP 1000; SAE J78, J81
Eddy Current	ASTM E566 (Comparative Coil Method)
Hardness	
Rockwell (B, C, 30N)	ASTM A370, E18, F606, F606M; ISO 898-1, 898-2; NASM 1312-6; SAE J429, J995
Leeb Hardness	ASTM A956
Hex Socket Strength	ASTM F880, F880M, F912, F912M
Microhardness (Vickers) (300 & 500 gf)	ASTM E384
Proof (Internal / External Threaded)	
Bolts	ASTM A370 (A3.2.1.2), F606M (3.2.3); ISO 898-1 (8.4); SAE J429 (6.4)
Nuts	ASTM A370 (A3.5.1), F606M (4.2); ISO 898-2 (8.1); SAE J995 (5.1)
Rotational Capacity	AASHTO M164; ASTM A325

Test
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Test Methods

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Sampling	ASME/ANSI B18.18.2M, B18.18.3M, B18.18.4M per product specifications
Stress Durability (Hydrogen Embrittlement)	ASME B18.6.4; ASTM F606, F606M; FIP 1000; SAE J81, J933
Tensile (Axial, Wedge)	ASTM A370 (A3.2, 13.2.1), F606, F606M (3.4, 3.5, 3.6); DIN 267-11; ISO 898-1 (8.1, 8.5); MIL-STD-FFS 85; NASM 1312-8; SAE J429 (6.5, 6.6)
Torsional Strength	SAE J78, J81, J933
Torque	
Torque Tension	IFI 101; SAE J174
Prevailing Torque	ASME B18.16.6; IFI 100-107; ISO 2320
<u>Metallographic Evaluation</u>	
Case Depth	SAE J423, J78, J81, J933
Decarburization	ASTM A574, A574M, F835, F835M, F912, F912M, F2328; ISO 898-1, 898-5; SAE J419
Discontinuities (Visual, MT, PT, NDT)	AMS 2644; ASTM A574, A574M, E709, F788, F788M, F812, F912, E1417, E1444; ISO 6157; NAVSEA T9074-AS-GIB-01/271; SAE J122, J123
Plating Thickness	ASTM B487
Salt Spray	ASTM B117
<u>Nondestructive Analysis</u>	
Magnetic Permeability	ASTM A342 (Method 3)
XRF PMI Analyzer	Niton Alloy Analyzer User's Guide
<u>Chemical Analysis</u>	
Optical Emission Spectroscopy (On alloy & stainless steel for: B, C, Co, Cr, Cu, Mn, Mo, Nb, Ni, P, Pb, S, Si, Ti, V, W)	ASTM E415, E1086

I. Dimensional Testing¹



Parameter	Range	CMC ² (±)	Technique/Method
Threads ³	#4 to 2½ in M3 to M24	0.0095 in 0.23 mm	Rings, plugs/ ANSI B1.1, B1.3 (System 21)
	Up to 2 in	0.00084 in	Pitch micrometer/ ANSI B1.1 (System 21)
Linear ³ -1D -2D	Up to 24 in	0.0003 in	Gage maker/ NAVAIR 17-MD20-39
	Up to 3 in	0.00026 in	Outside micrometers
	Up to 60 in	(1200 + 82L) µin	Calipers 6, 12, 60 in/ L is length in inches.
	Up to 1 in	0.00053 in	Digital indicator/ ASME B18.2.1
	(0.011 to 1.00) in	0.00024 in	Pin gage/ SAE J81
	x axis: Up to 8 in y axis: Up to 4 in	0.00068 in 0.00039 in	Optical comparators
Angle ³	0° to 360°	12'	Optical comparators
Radii ³	Up to 0.675 in	0.0021 in	Optical comparators
Recesses ³	Up to 1 in	0.002 in	Recess penetration/ ASME B18.6.3, B18.6.4
Flat Head ³	Up to 1 in	0.00065 in	Protrusion gage/ ASME B18.6.3, B18.6.4

¹ Commercial dimensional testing service is sometimes available for this laboratory.

² Calibration and Measurement Capability (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. Calibration and Measurement Capabilities 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 calibration 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 calibration.

³ This test is not equivalent to that of a calibration.



American Association for Laboratory Accreditation

Accredited Laboratory

A2LA has accredited

FASTENAL COMPANY LABORATORY

Winona, MN

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 29th day of September 2014.





President & CEO

For the Accreditation Council
Certificate Number 1046.01
Valid to September 30, 2016

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