



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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MECHANICAL

Valid To: September 30, 2016

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; ISO 898-1, 898-2; SAE J429, J995 |
| 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) Yield Strength, Elongation and Reduction of Area | ASTM A370 (A3.2), F606 (3.4, 3.5, 3.6, 3.7); ISO 898-1 (9.1, 9.2, 9.7), 3506-1; SAE J429 (6.5, 6.6) |
| Proof Bolts | ASTM A370 (A3.2.1.2), F606 (3.2.1); ISO 898-1 (9.6); SAE J429 (6.4) |
| Nuts | ASTM A962 (11.1), F606 (4.2); DIN 267 Part 4; ISO 898-2 (8.1); SAE J995 (5.1) |
| Charpy Impact Strength | ASTM A370, E23 |
| <u>Metallographic Evaluation</u> | |
| Decarburization | ASTM F835, F912, F2328; ISO 898-1, 898-5; SAE J121, J419 |
| Case Depth | SAE J423 |
| Discontinuity (External Thread Acceptance) | ASTM F788 |

I. Dimensional Testing¹:

| Parameter | Range | CMC ² (±) | Technique / Method |
|-------------------------------------|---|--------------------------|--|
| Threads ³ (System 21) | #4 to 2 in M10 to M27 | N/A | Rings / ASME B1.3M, ASME B1.16M |
| | Up to 2 in | 0.00083 in. | Pitch micrometer / ASME B1.3M |
| | #4 to 1-1/2 in M6 to M27 | N/A | Plug gages / ASME B1.3M, ASME B1.16M |
| Linear ³ – 1D | Up to 3 in | 0.00016 in | Outside micrometers |
| | 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 |
| Linear ³ – 2D | x axis: Up to 12 in y axis: Up to 8 in | 0.00074 in 0.00081 in | Video measurement / QA7M-114 |
| Angle ³ | 0° to 180° | 0.09° | Video measurement / QA7M-114 |
| Radii ³ | Up to 5 mm | 14 µm | Video measurement / QA7M-114 |
| Recess Penetration ³ | Hex: 5/64 to 3/8 in 4 to 10 mm Philips: #1, #2, #3 Slot Pin | 0.0020 in | Recess penetration gage / ASME B18.6.3, B18.6.4 |

| Parameter | Range | CMC ² (±) | Technique/Method |
|------------------------|-----------------|----------------------|--|
| Wobble ³ | Phillips #2, #3 | 0.58 ° | Wobble gage / ASME B18.6.4 |
| Flat Head ³ | Up to 3/8 in | 0.00065 in | Protrusion gage / ASME B18.6.3, B18.6.4 |

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

²Calibration 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. 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 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.

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



American Association for Laboratory Accreditation

Accredited Laboratory

A2LA has accredited

FASTENAL COMPANY LABORATORY-MALAYSIA

Johor, 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 8 January 2009*).

Presented this 3rd day of March 2015.





President & CEO

For the Accreditation Council

Certificate Number 1046.05

Valid to September 30, 2016

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