



Standard Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, Direct Tension Indicators, and Rivets¹

This standard is issued under the fixed designation F606/F606M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 These test methods cover establishment of procedures for conducting tests to determine the mechanical properties of externally and internally threaded fasteners, washers, direct tension indicators, and rivets.

1.2 Property requirements and the applicable tests for their determination are specified in individual product standards. In those instances where the testing requirements are unique or at variance with these standard procedures, the product standard shall specify the controlling testing requirements. In the absence of any specified test requirement(s), these test methods shall apply.

1.3 These test methods describe mechanical tests for determining the following properties:

	Section
For Externally Threaded Fasteners:	3
Product Hardness	3.1
Proof Load	3.2.1
Method 1, Length Measurement	3.2.3
Method 2, Yield Strength	3.2.4
Method 3, Uniform Hardness	3.2.5
Axial Tension Testing of Full-Size Product	3.4
Wedge Tension Testing of Full-Size Product	3.5
Tension Testing of Machined Test Specimens	3.6
Total Extension at Fracture Test	3.7
Single Shear Test	3.8
For Internally Threaded Fasteners:	4
Product Hardness	4.1
Proof Load Test	4.2
Cone Proof Load Test	4.3
For Washers and Direct Tension Indicators:	5
Product Hardness-General Requirements	5.1
Through Hardened Washers	5.2
Carburized Washers	5.3
Stainless Steel and Nonferrous Washers	5.4
Direct Tension Indicators	5.5
Compression Load	5.6
For Rivets:	6

Product Hardness	6.1
Test for Embrittlement of Metallic-Coated Externally Threaded Fasteners	7
Test Method for Determining Decarburization and Carburization	8

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

NOTE 1—The values are stated in inch-pound for inch fasteners and SI metric units for metric fasteners.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

- A394 Specification for Steel Transmission Tower Bolts, Zinc-Coated and Bare
- E4 Practices for Force Verification of Testing Machines
- E8/E8M Test Methods for Tension Testing of Metallic Materials
- E10 Test Method for Brinell Hardness of Metallic Materials
- E18 Test Methods for Rockwell Hardness of Metallic Materials
- E83 Practice for Verification and Classification of Extensometer Systems
- E92 Test Methods for Vickers Hardness and Knoop Hardness of Metallic Materials
- E384 Test Method for Microindentation Hardness of Materials
- F436/F436M Specification for Hardened Steel Washers Inch

¹ These test methods are under the jurisdiction of ASTM Committee F16 on Fasteners and are the direct responsibility of Subcommittee F16.01 on Test Methods.

Current edition approved Sept. 1, 2016. Published September 2016. Originally approved in 1979. Last previous edition approved in 2014 as F606 – 14a^{ε1}. DOI: 10.1520/F0606_F0606M-16.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

*A Summary of Changes section appears at the end of this standard