



Standard Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets [Metric]¹

This standard is issued under the fixed designation F 606M; 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 Department of Defense.

1. Scope

1.1 These test methods cover establishment of procedures for conducting tests to determine the mechanical properties of metric externally and internally threaded fasteners, washers, 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 shall specify the controlling testing requirements.

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

Tests	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 Products	3.4
Wedge Tension Testing of Full Size Products	3.5
Tension Testing of Machined Test Specimens	3.6
Total Extension at Fracture Test	3.7
For Internally Threaded Fasteners:	4
Product Hardness	4.1
Proof Load	4.2
Cone Proof Load Test	4.3
For Washers and Direct Tension Indicators:	5
General Requirements	5.1
Through Hardened Washers	5.2
Carburized Washers	5.3
For Rivets:	6
Product Hardness	6.1
Test for Embrittlement of Metallic Coated Externally Threaded Fasteners	7
Test Method for Measuring Compression Loads (All Finishes) on Direct Tension Indicators Covered by Test Method F 959M	Annex A1

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the*

responsibility of all of the users of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

NOTE 1—These test methods are the metric companion of Test Methods F 606.

2. Referenced Documents

2.1 ASTM Standards:

E 8M Test Methods for Tension Testing of Metallic Materials [Metric]²

E 10 Test Method for Brinell Hardness of Metallic Materials²

E 18 Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials²

E 83 Practice for Verification and Classification of Extensometers²

E 92 Test Method for Vickers Hardness of Metallic Materials²

E 384 Test Method for Microindentation Hardness of Materials²

F 436M Specification for Hardened Steel Washers [Metric]³

F 606 Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets³

F 959M Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets [Metric]³

F 1624 Test Method for Measurement of Hydrogen Embrittlement in Steel by the Incremental Loading Technique⁴

3. Test Methods for Externally Threaded Fasteners

3.1 *Product Hardness*—Tests shall be conducted after the removal of any surface oxide, decarburization, plating or other coating. All readings shall be within the hardness values listed

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 Aug. 10, 2002. Published October 2002. Originally published as F 606M – 87. Last previous edition F 606M – 01.

² *Annual Book of ASTM Standards*, Vol 03.01.

³ *Annual Book of ASTM Standards*, Vol 01.08.

⁴ *Annual Book of ASTM Standards*, Vol 15.03.