



METRIC
Designation: ~~F 436M – 93 (Reapproved 2000)~~ **436M – 03**

Standard Specification for Hardened Steel Washers [Metric]¹

This standard is issued under the fixed designation F 436M; 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 This specification covers the chemical, mechanical, and dimensional requirements for metric hardened steel washers for use with fasteners having nominal thread diameters M12 through M100. These washers are intended for general-purpose mechanical and structural use with bolts, nuts, studs, and other internally and externally threaded fasteners. These washers are suitable for use with fasteners covered in Specifications A 325M, A 490M, A 563M and with fasteners of Specification F 568 property classes 8.8 and higher.

1.2 The types of washers covered in this specification are:

1.2.1 *Type 1*—Washers made of carbon steel.

1.2.2 *Type 3*—Washers made of steel having atmospheric corrosion resistance and weathering characteristics comparable to that of steels covered in Specifications A 242/A 242M, A 588/A 588M, and A 709. The atmospheric corrosion resistance of these steels is substantially better than that of carbon steel with or without copper addition. See 5.1. When properly exposed to the atmosphere, these steels can be used bare (uncoated) for many applications.

1.3 The styles of washers covered in this specification are:

1.3.1 *Circular Washers*—Circular washers in nominal sizes 12 mm through 100 mm, are suitable for applications where sufficient space exists and angularity permits.

1.3.2 *Beveled Washers*—Beveled washers are square and rectangular, in nominal sizes 12 mm through 36 mm, with a beveled 1:6 surface for use with American Standard beams and channels.

1.3.3 *Clipped Washers*—Clipped washers are circular or beveled for use where space limitations necessitate that one side be clipped.

NOTE 1—This specification is the metric counterpart of Specification F 436.

1.4 Terms used in this specification are defined in Terminology F 1789 unless otherwise defined herein.

2. Referenced Documents

2.1 *ASTM Standards:*

A 153/A 153M Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware²

¹ This specification is under the jurisdiction of ASTM Committee F-16 on Fasteners and is the direct responsibility of Subcommittee F16.02 on Steel Bolts, Nuts, Rivets, and Washers.

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