



## Standard Specification for Rollers, Bearing, Needle, Ferrous, Solid<sup>1</sup>

This standard is issued under the fixed designation F2511; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This specification covers the procurement requirements for solid ferrous needle bearing rollers including the MS19065 spherical ended solid ferrous needle rollers as specified in Specification **F2443**.

1.2 *Intended Use*—The rollers covered in this specification are intended for use in bearings and bearing applications.

1.3 This specification contains many of the requirements of MIL-R-22440, which was originally developed by the Department of Defense and maintained by the Defense Supply Center in Richmond. The following government activity codes may be found in the Department of Defense, Standardization Directory SD-1.<sup>2</sup>

Preparing Activity  
DLA-GS4

Custodians  
Army-AT  
Navy-OS  
Air Force-99  
DLA-GS4

Review Activities  
Army-CR4  
Air Force-84

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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:<sup>3</sup>

**A295/A295M** Specification for High-Carbon Anti-Friction Bearing Steel

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee F34 on Rolling Element Bearings and is the direct responsibility of Subcommittee F34.01 on Rolling Element.

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<sup>2</sup> The Military codes that are listed in SD-1 give the address and phone numbers of the DoD contacts. These are found in the DoD's ASSIST website <http://assist.daps.dla.mil/online/start/>.

<sup>3</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

**A751** Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products

**D1974** Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes

**D3951** Practice for Commercial Packaging

**D3953** Specification for Strapping, Flat Steel and Seals

**D5118/D5118M** Practice for Fabrication of Fiberboard Shipping Boxes

**D5168** Practice for Fabrication and Closure of Triple-Wall Corrugated Fiberboard Containers

**D6251/D6251M** Specification for Wood-Cleated Panelboard Shipping Boxes

**E18** Test Methods for Rockwell Hardness of Metallic Materials

**E140** Hardness Conversion Tables for Metals Relationship Among Brinell Hardness, Vickers Hardness, Rockwell Hardness, Superficial Hardness, Knoop Hardness, Scleroscope Hardness, and Leeb Hardness

**E381** Method of Macroetch Testing Steel Bars, Billets, Blooms, and Forgings

**E384** Test Method for Knoop and Vickers Hardness of Materials

**F2443** Specification for Roller, Bearing, Needle, Ferrous, Solid, Spherical End

#### 2.2 ANSI Standards:<sup>4</sup>

**ASME B46.1** Surface Texture (Surface Roughness, Waviness, and Lay)

**ASME Y14.5** Dimensioning and Tolerancing

**ANSI/ASQ Z1.4** Sampling Procedures and Tables for Inspection by Attributes

#### 2.3 ISO Standards:<sup>5</sup>

**ISO 5593** Rolling Bearings—Vocabulary

**ISO 10012–1** Quality Assurance Requirements for Measuring Equipment

#### 2.4 Military Standards:<sup>6</sup>

**MIL-PRF-121** Barrier Materials, Greaseproof, Waterproof, Flexible, Heat-Sealable

**MIL-STD-129** Military Marking for Shipment and Storage

<sup>4</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

<sup>5</sup> Available from International Organization for Standardization (ISO), 1 rue de Varembe, Case postale 56, CH-1211, Geneva 20, Switzerland.

<sup>6</sup> Available from the DOD's Assist internet site located at: <http://assist.daps.dla.mil/online/start/>.