



Designation: A 752M – 93 (Reapproved 2003)

METRIC

Standard Specification for General Requirements for Wire Rods and Coarse Round Wire, Alloy Steel [Metric]¹

This standard is issued under the fixed designation A 752M; 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.

1. Scope

1.1 This specification covers general requirements for alloy steel rods and uncoated coarse round alloy wire in coils that are not required to meet hardenability band limits.

1.2 In case of conflict, the requirements in the purchase order, on the drawing, in the individual specification, and in this general specification shall prevail in the sequence named.

NOTE 1—This specification is the metric counterpart of Specification A 752.

2. Referenced Documents

2.1 ASTM Standards:

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products²

A 700 Practices for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment³

A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products²

A 919 Terminology Relating to Heat Treatment of Metals⁴

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁵

E 112 Test Methods for Determining Average Grain Size⁶

2.2 Military Standard:

MIL-STD-163 Steel Mill Products, Preparation for Shipment and Storage⁷

2.3 Federal Standard:

Fed. Std. No. 123 Marking for Shipment (Civil Agencies)⁷

2.4 AIAG Standard:

AIAGB-5 02.00 Primary Metals Identification Tag Application Standard⁸

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *alloy steel*—steel is considered to be alloy steel when the maximum of the range given for the content of alloying elements exceeds one or more of the following limits: manganese 1.65 %, silicon 0.60 %, copper 0.60 %; or in which a definite range or a definite minimum quantity of any of the following elements is specified or required within the limits of the recognized field of constructional alloy steels: chromium up to 3.99 %, cobalt, columbium, molybdenum, nickel, titanium, tungsten, vanadium, zirconium, or any other alloying elements added to obtain a desired alloying effect.

3.1.1.1 Boron treatment of alloy steels, which are fine grain, may be specified to improve hardenability.

3.1.1.2 Other elements, such as lead, selenium, tellurium, or bismuth, may be specified to improve machinability.

3.1.2 *coarse round wire*—from 0.90 to 25 mm in diameter, inclusive, wire produced from hot-rolled wire rods or hot-rolled coiled rounds by one or more cold reductions primarily for the purpose of obtaining a desired size with dimensional accuracy, surface finish, and mechanical properties. By varying the amount of cold reduction and other wire mill practices, including thermal treatment, a wide diversity of mechanical properties and finishes are made available. Suggested wire diameters are shown in Table 1.

3.1.3 *straightened and cut wire*—wire produced from coils of wire by means of special machinery that straightens the wire and cuts it to a specified length.

3.1.3.1 The straightening operation may alter the mechanical properties of the wire, especially the tensile strength. The straightening operation may also induce changes in the diameter of the wire. The extent of the changes in the properties of the wire after cold straightening depends upon the kind of wire

¹ This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.03 on Steel Rod and Wire.

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² Annual Book of ASTM Standards, Vol 01.03.

³ Annual Book of ASTM Standards, Vol 01.05.

⁴ Annual Book of ASTM Standards, Vol 01.02.

⁵ Annual Book of ASTM Standards, Vol 14.02.

⁶ Annual Book of ASTM Standards, Vol 03.01.

⁷ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

⁸ Available from the Automotive Industry Action Group, 26200 Lahser, Suite 200, Southfield, MI 48034.