



Designation: B 802/B 802M – 98

AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Specification for Zinc–5 % Aluminum-Mischmetal Alloy-Coated Steel Core Wire for Aluminum Conductors, Steel Reinforced (ACSR)¹

This standard is issued under the fixed designation B 802/B 802M; 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 round, zinc–5 % aluminum-mischmetal (Zn–5Al–MM) alloy-coated, steel core wire with three classes of Zn–5Al–MM coating used for mechanical reinforcement in the manufacture of aluminum conductors, steel reinforced (ACSR).

1.2 This specification covers wire of diameter from 0.0500 to 0.1900 in. or 1.60 to 4.80 mm, inclusive.

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

2. Referenced Documents

2.1 The following documents of the issue in effect on date of material purchase form a part of this specification to the extent referenced herein.

2.2 ASTM Standards:

A 90/A 90M Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings²

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products³

A 751 Test Methods, Practices and Terminology for Chemical Analysis of Steel Products³

B 193 Test Method for Resistivity of Electrical Conductor Materials⁴

B 750 Specification for Zinc–5 % Aluminum-Mischmetal Alloy (UNS Z38510) in Ingot Form for Hot-Dip Coatings⁵

E 47 Test Methods for Chemical Analysis of Zinc Die-Casting Alloys⁶

E 1277 Test Method for Chemical Analysis of Zinc-5

Aluminum-Mischmetal Alloy by ICP Emission Spectrometry⁷

2.3 Other Standard:

GF-1 Standard Practice for Determination of Cerium and Lanthanum Compositions in Galfan Alloy (5 % Al–0.04 % La–0.04 % Ce–Bal SHG Zn)⁸

3. Terminology

3.1 Abbreviations:

3.1.1 *MM*—mischmetal.

3.1.2 *Zn–5Al–MM*—zinc–5 % aluminum mischmetal.

3.2 Definition:

3.2.1 *lot*—unless otherwise specified in the contract or order, a lot shall consist of all coils of wire of the same diameter and unit lengths submitted for inspection at the same time.

4. Classification

4.1 The wire is furnished in three classes of coating, Class A, Class B, or Class C, as specified, in conformance with the requirements of Section 12 and Table 1 or Table 2.

5. Ordering Information

5.1 Orders for material under this specification shall include the following information:

5.1.1 Quantity of each size,

5.1.2 Wire diameter in inches or millimetres (Section 8),

5.1.3 Class of coating (see 4.1),

5.1.4 Certification, if required (Section 19),

5.1.5 Test report, if required (Section 19), and

5.1.6 Package Size (Section 20).

6. Materials and Manufacture

6.1 The base metal shall be steel produced by the open-hearth, electric furnace, or basic oxygen process.

6.2 The wire shall be cold drawn and coated with Zn–5Al–MM alloy to produce the desired properties.

7. Chemical Composition

7.1 The steel shall conform to the requirements prescribed in Table 3.

¹ This specification is under the jurisdiction of ASTM Committee B-01 on Electrical Conductors and is the direct responsibility of Subcommittee B01.05 on Conductors of Ferrous Metals.

Current edition approved Sept. 10, 1998. Published November 1998. Originally published as B 802 – 89. Last previous edition B 802 – 94.

² *Annual Book of ASTM Standards*, Vol 01.06.

³ *Annual Book of ASTM Standards*, Vol 01.03.

⁴ *Annual Book of ASTM Standards*, Vol 02.03.

⁵ *Annual Book of ASTM Standards*, Vol 02.04.

⁶ *Annual Book of ASTM Standards*, Vol 03.05.

⁷ *Annual Book of ASTM Standards*, Vol 03.06.

⁸ Available from International Lead Zinc Research Organization, 2525 Meridian Parkway, P.O. Box 12036, Research Triangle Park, NC 27709-2036.