



Standard Specification for High-Strength Zinc-Coated (Galvanized) Steel Core Wire for Aluminum and Aluminum-Alloy Conductors, Steel Reinforced¹

This standard is issued under the fixed designation B 606; 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, high-strength, zinc-coated (galvanized), steel core wire with Class A zinc coating used for mechanical reinforcement in the manufacture of special aluminum and aluminum-alloy conductors, steel reinforced.

1.2 This specification covers wire of diameter from 0.0500 to 0.1900 in. inclusive.

1.3 The values stated in inch-pound units are to be regarded as the standard, with the exception of resistivity. The values given in parentheses are for information only.

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/A90M 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 6 Specification for Zinc⁴

B 193 Test Method for Resistivity of Electrical Conductor Materials⁵

3. Terminology

3.1 Definitions:

3.1.1 *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.

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

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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 02.04.

⁵ Annual Book of ASTM Standards, Vol 02.03.

4. Ordering Information

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

4.1.1 Quantity of each size,

4.1.2 Wire diameter in inches (Section 13),

4.1.3 Certification, if required (Section 18),

4.1.4 Test report, if required (Section 18), and

4.1.5 Package size (Section 19).

5. Materials and Manufacture

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

5.2 The wire shall be cold drawn and coated with zinc to produce the desired properties.

5.3 The slab zinc used for coating shall be high grade or better, conforming to Specification B 6.

6. Chemical Composition

6.1 The steel shall conform to the requirements prescribed in Table 1.

TABLE 1 Chemical Requirements

Element	Composition, %
Carbon	0.50 to 0.88
Manganese	0.50 to 1.30
Phosphorus, max	0.035
Sulfur, max	0.045
Silicon	0.10 to 0.35

6.2 Chemical analysis shall be conducted in accordance with Test Methods A 751.

7. Tensile Test

7.1 The zinc-coated steel core wire shall conform to the tensile and elongation requirements prescribed in Table 2.

7.2 Tensile tests shall be conducted in accordance with Test Methods A 370, using the initial settings for determining stress at 1 % extension given in Table 3 of this specification.

7.3 *Test Specimens*— The test specimens shall be free of bends or kinks other than the curvature resulting from the usual coiling operations. Any hand straightening necessary to permit insertion of the specimen in the jaws of the testing machine shall be performed by drawing between wood blocks or by