



Standard Specification for Aluminum-Coated (Aluminized) Steel Core Wire for Aluminum Conductors, Steel Reinforced (ACSR/AZ)¹

This standard is issued under the fixed designation B 341/B 341M; 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, aluminum-coated steel core wire 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 370 Test Methods and Definitions for Mechanical Testing of Steel Products²

A 428/A 428M Test Method for Weight [Mass] of Coating on Aluminum-Coated Iron or Steel Articles³

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

B 193 Test Method for Resistivity of Electrical Conductor Materials⁴

3. Terminology

3.1 Definition:

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 Committee B01 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 01.03.

³ Annual Book of ASTM Standards, Vol 01.06.

⁴ Annual Book of ASTM Standards, Vol 02.03.

TABLE 1 Chemical Requirements

Element	Composition, %
Carbon	0.50 to 0.95
Manganese	0.50 to 1.30
Phosphorus, max	0.040
Sulfur, max	0.050
Silicon	0.10 to 0.35

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 or millimetres (see 1.2, 13.1),

4.1.3 Certification, if required (Section 19),

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

4.1.5 Package size (Section 20).

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 aluminum to produce the desired properties.

5.3 The ingot or pig aluminum used for coating shall conform to the following impurity limits:

Copper, max, % 0.10

Iron, max, % 0.50

6. Chemical Composition

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

6.2 Chemical analysis shall be conducted in accordance with Test Methods, Practices, and Terminology A 751.

7. Tensile Test

7.1 The material, as represented by the test specimens, shall conform to the tensile properties prescribed in Table 2 or Table 3.

7.2 Tensile tests shall be conducted in accordance with Test Methods and Definitions A 370, using the initial settings for determining stress at 1 % extension given in Table 4 or Table 5 of this specification.