



Designation: A460 – 11 (Reapproved 2025)

Standard Specification for Copper-Clad Steel Wire Strand¹

This standard is issued under the fixed designation A460; 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 copper-clad steel wire strand composed of a number of round steel, copper-clad wires, for use as guys, messengers, span wires, and for similar purposes where electrical conductance is not a requirement.

1.2 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.

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

A902 Terminology Relating to Metallic Coated Steel Products

3. Terminology

3.1 For definitions of terms used in this specification see Terminology A902.

4. Classification

4.1 The strand is classified by the minimum breaking strength and number of wires in the strand as stated in Table 1.

5. Ordering Information

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

5.1.1 Quantity of strand in feet.

¹ This specification is under the jurisdiction of ASTM Committee A05 on Metallic-Coated Iron and Steel Products and is the direct responsibility of subcommittee A05.12 on Wire Specifications.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

5.1.2 Breaking strength and number of wires in strand (4.1 and Table 1).

5.1.3 Package size of coils or reels from Table 2.

5.1.4 ASTM designation and year of issue.

6. Materials and Manufacture

6.1 Each wire in the strand shall be composed of a steel core made from steel produced by any commercially-accepted steel-making process, with a substantially uniform and continuous copper cladding thoroughly bonded to it throughout. The thickness and adherence of the copper cladding on the finished wire shall comply with the requirements prescribed in this specification.

6.2 Each wire in the strand shall be of such quality that, when drawn to the size specified in Table 1 and when fabricated into strand, the finished copper-clad steel wire strand shall have the properties and characteristics prescribed in this specification.

7. Stranding

7.1 The strand shall consist of either 3 or 7 wires and, unless otherwise specified, shall have a left lay with a uniform pitch. In 3-wire strand, the pitch shall be not less than 12 nor more than 20 times the nominal diameter of the strand. In 7-wire strand, the pitch shall be not less than 10 nor more than 16 times the nominal diameter of the strand. A left lay is defined as a counter-clockwise twist away from the observer looking along the axis of the strand. All wires shall be stranded with uniform tension.

7.2 All wires in the strand shall lie naturally in their true positions in the completed strand, and when the strand is cut, the ends shall remain in position or be readily replaced by hand and then remain in position. This may be accomplished by any means or process, such as preforming, post forming, or form setting.

8. Joints and Splices

8.1 Joints or splices may be made prior to final wire drawing in individual finished wires composing the strand, provided that such joints or splices have protection from corrosion equivalent to that of the copper-clad wire itself and that they do not decrease the strength of the finished strand below the minimum breaking strength shown in Table 1. A joint or splice