



Designation: A121 – 22

Standard Specification for Metallic-Coated Carbon Steel Barbed Wire¹

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This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers metallic-coated steel barbed wire, consisting of a strand of two wires.

1.2 The barbed wire is available with aluminum, zinc, and zinc-5 % aluminum-mischmetal alloy coatings, with a number of coating weights, in a number of different constructions (designs), and in two grades. Not all designs are available in all coating types.

1.3 *Units*—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.

1.4 The text of this specification references notes and footnotes that provide explanatory information. These notes and footnotes (excluding those in tables) shall not be considered as requirements of the specification.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *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

[A90/A90M Test Method for Weight \[Mass\] of Coating on](#)

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 service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[Iron and Steel Articles with Zinc or Zinc-Alloy Coatings](#)
[A428/A428M Test Method for Weight \[Mass\] of Coating on Aluminum-Coated Iron or Steel Articles](#)
[A641/A641M Specification for Zinc-Coated \(Galvanized\) Carbon Steel Wire](#)
[A700 Guide for Packaging, Marking, and Loading Methods for Steel Products for Shipment](#)
[A809 Specification for Aluminum-Coated \(Aluminized\) Carbon Steel Wire](#)
[A856/A856M Specification for Zinc-5 % Aluminum-Mischmetal Alloy-Coated Carbon Steel Wire](#)
[A902 Terminology Relating to Metallic Coated Steel Products](#)

2.2 Federal Standard:³

[Fed. Std. No. 123 Marking for Shipments \(Civil Agencies\)](#)

2.3 Military Standards:³

[MIL-STD-129 Marking for Shipment and Storage](#)

[MIL-STD-163 Steel Mill Products Preparation for Shipment and Storage](#)

3. Terminology

3.1 *Definitions*—For definitions of terms not specified in this specification, refer to Terminology [A902](#).

4. Classification

4.1 The barbed wire covered by this specification is classified as described in this section.

4.2 *Design Number*—Numbers describing standard sizes and constructions, as listed in [Table 1](#).

4.3 Metallic Coating Type:

4.3.1 *Coating Type A*—Made from aluminum-coated strand wire. See [6.3](#). (Only one coating weight for each wire size.)

4.3.2 *Coating Type Z*—Made from zinc-coated strand wire. See [Table 2](#).

4.3.3 *Coating Type ZA*—Made from zinc-5 % aluminum-mischmetal alloy (Zn-5AL-MM) coated strand wire. See [Table 3](#).

³ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098.



TABLE 1 Standard Sizes and Constructions for Barbed Wire

Design Number	Size, Steel Wire Gauge	Nominal Diameter of Coated Wire, in. (mm)	Number of Barb Points	Spacing of Barbs, in. (mm)	Diameter of Barbs, Steel Wire Gauge ^A	Shape of Barbs
Metallic Coating Type A						
12-4-3-14R	12½	0.099 (2.51)	4	3 (76)	14	Round
12-4-5-14R	12½	0.099 (2.51)	4	5 (127)	14	Round
12-4-3-12R ^B	12½	0.099 (2.51)	4	3 (76)	12	Round
Metallic Coating Type Z and Type ZA						
12-2-4-12F	12½	0.099 (2.51)	2	4 (102)	12½ ^C	Flat
12-2-4-13F	12½	0.099 (2.51)	2	4 (102)	13 ^C	Flat
12-2-4-14R	12½	0.099 (2.51)	2	4 (102)	14	Round
12-2-5-12F	12½	0.099 (2.51)	2	5 (127)	12½ ^C	Flat
12-2-5-14R	12½	0.099 (2.51)	2	5 (127)	14	Round
12-4-5-14H	12½	0.099 (2.51)	4	5 (127)	14 ^C	Half-round
12-4-5-14R	12½	0.099 (2.51)	4	5 (127)	14	Round
13-2-4-14R	13½	0.086 (2.18)	2	4 (102)	14	Round
13-2-5-14R	13½	0.086 (2.18)	2	5 (127)	14	Round
13-4-5-14R	13½	0.086 (2.18)	4	5 (127)	14	Round
14-2-4-14F	14	0.080 (2.03)	2	4 (102)	14	Flat
14-2-5-14F	14	0.080 (2.03)	2	5 (127)	14	Flat
14-4-3-14F	14	0.080 (2.03)	4	3 (76)	14	Flat
14-4-5-14F	14	0.080 (2.03)	4	5 (127)	14	Flat
14-2-5-14R	14	0.080 (2.03)	2	5 (127)	14	Round
14-4-5-14R	14	0.080 (2.03)	4	5 (127)	14	Round
15-2-5-13F	15½	0.067 (1.70)	2	5 (127)	13¾ ^C	Flat
15-2-5-14R	15½	0.067 (1.70)	2	5 (127)	14	Round
15-4-5-16R	15½	0.067 (1.70)	4	5 (127)	16½	Round
15-4-3-16R	15½	0.067 (1.70)	4	3 (76)	16½	Round

^A The nominal diameter of the wire used in making the barbs shall be as follows:

- 12 gauge, 0.1040 in. (2.64 mm)
- 12½ gauge 0.099 in. (2.51 mm)
- 13 gauge 0.092 in. (2.34 mm)
- 13¾ gauge 0.083 in. (2.11 mm)
- 14 gauge 0.080 in. (2.03 mm)
- 16½ gauge 0.058 in. (1.47 mm)

^B Design Number 12–4–3–12R, Metallic Coated Type A, is High-Security Grade. All other design numbers are for standard grade.

^C The gauge of the half-round and flat barbs is designated by the gauge of the round wire from which the barbs are rolled.

TABLE 2 Minimum Weight of Coating on Type Z Barbed Wire

Size, Steel Wire Gauge	Nominal Diameter of Type Z		Minimum Weight of Coating of Uncoated Wire Surface, oz/ft ² (g/m ²)	
	in.	(mm)	Class 1	Class 3
12½	0.099	(2.51)	0.28 (85)	0.80 (245)
13	0.092	(2.34)	0.28 (85)	0.75 (230)
13½	0.086	(2.18)	0.25 (75)	0.70 (215)
13¾	0.083	(2.11)	^A	0.70 (215)
14	0.080	(2.03)	0.25 (75)	0.70 (215)
15½	0.067	(1.70)	^A	0.65 (200)
16½	0.058	(1.47)	^A	0.60 (200)

^A These sizes only furnished with Class 3 Coating (Section 8).

4.4 *Metallic Coating Class*—The specified amount of coating (coating weight (mass)) on the strand wire.

4.5 Grades:

4.5.1 *Standard Grade*—Barbs spaced on 4 or 5 in. (102 or 127 mm) centers as indicated in Table 1.

4.5.2 *High-Security Grade*—Barbs spaced on 3 in. (76 mm) centers with Coating Type A, Z, or ZA only.

NOTE 1—The design numbers are related to the characteristics of the construction of the barbed wire, with the number groups related, in order, to the steel wire gauge of the strand wires, number of barb points, spacing of barbs, steel wire gauge of the barbs, and a letter indicating the shape of the barbs.

TABLE 3 Minimum Weight of Coating on Type ZA Barbed Wire

Size, Steel Wire Gauge	Nominal Diameter of Type ZA		Minimum Weight of Coating of Uncoated Wire Surface, oz/ft ² (g/m ²)		
	in.	(mm)	Class 1	Class 3	Class 60
12½	0.099	(2.51)	0.28 (85)	0.80 (245)	0.60 (183)
13	0.092	(2.34)	0.28 (85)	0.75 (230)	0.60 (183)
13½	0.086	(2.18)	0.25 (75)	0.70 (215)	0.60 (183)
13¾	0.083	(2.11)	0.25 (75)	0.70 (215)	0.60 (183)
14	0.080	(2.03)	0.25 (75)	0.70 (215)	0.60 (183)
15½	0.067	(1.70)	0.20 (61)	0.65 (198)	n/a
16½	0.058	(1.47)	0.20 (61)	0.60 (183)	n/a

5. Ordering Information

5.1 Orders for material under this specification shall include the following information, as necessary to describe the desired product.

5.1.1 Name of material (steel barbed wire),

5.1.2 Quantity (number of spools and length of barbed wire on each, or total length) (see 7.5 for standard size of spools),

5.1.3 Metallic coating type (see 4.3),