



Designation: A 741 – 98

Standard Specification for Zinc-Coated Steel Wire Rope and Fittings for Highway Guardrail¹

This standard is issued under the fixed designation A 741; 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 ¾ and 1-in. (19 and 25-mm) zinc-coated steel wire rope and fittings for use in the construction of highway guardrail.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 ASTM Standards:

A 90/A 90M Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings.²

A 123/A 123M Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products²

A 153/A 153M Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware²

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

A 902 Terminology Relating to Metallic Coated Steel Products²

B 6 Specification for Zinc⁴

3. Terminology

3.1 Definitions—For definitions of terms used in this specification, refer to Terminology A 902.

4. Ordering Information

4.1 Orders for wire rope guardrail material purchased to this specification shall include the following:

- 4.1.1 Diameter of wire rope,
- 4.1.2 Type of wire rope construction,
- 4.1.3 Class of zinc coating required (Table 1),
- 4.1.4 Quantity of wire rope and length per reel, and
- 4.1.5 ASTM designation and year of issue.

¹ This specification is under the jurisdiction of ASTM Committee A-5 on Metallic Coated Iron and Steel Products and is the direct responsibility of Subcommittee A05.12 on Wire Specifications.

Current edition approved April 10, 1998. Published October 1998. Originally published as A 741 – 76. Last previous edition A 741 – 96.

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.

NOTE 1—A typical ordering description is as follows: ¾ -in. (19-mm) diameter, Zinc-Coated Wire Rope for Guardrail, Type 1 Construction, Class A Coating, 80 000 lineal ft (24 300 m) on forty 2 000-ft (608-m) reels, ASTM A 741– .

5. Material

5.1 *Base Metal*—The base metal shall be steel made by any process and shall be of such quality that the finished wire rope and the individual zinc-coated wires shall have the properties as prescribed in this specification.

5.2 *Zinc*—The slab zinc when used for the coating shall be any grade of zinc conforming to Specification B 6.

6. Mechanical Requirements

6.1 *Breaking Strength*—The zinc-coated steel wire rope shall conform to the mechanical properties in Table 2 when tested in accordance with Test Methods and Definitions A 370 and employing a suitable gripping device as covered in Supplement VII of Test Methods and Definitions A 370.

6.2 *Construction*—The zinc-coated wire rope and individual wires shall conform to the dimension and construction requirements of Table 2.

6.3 *Ductility of Steel*—The individual zinc-coated wires shall be capable of being wrapped two turns in a close helix at a rate not exceeding 15 turns per minute around a cylindrical steel mandrel equal to three times the nominal diameter of the wire under test without cracking or breaking of the wire.

6.4 *Weight of Zinc Coating*—The class of zinc coating shall be specified by the purchaser. The weight of the zinc coating on the individual wires for the specified class and appropriate wire size shall not be less than that specified in Table 1 when tested in accordance with the stripping test of Test Method A 90 /A 90M.

6.5 *Adherence of Coating*—The individual zinc-coated wires shall be capable of being wrapped two turns in a close helix at a rate not exceeding 15 turns per minute around a cylindrical steel mandrel equal to three times the nominal diameter of the wire under test without the coating cracking or flaking to such an extent that any zinc can be removed by rubbing with bare fingers. Loosening or detachment during the adherence test of superficial small particles of zinc formed by mechanical polishing of the surface of zinc-coated wire shall not be considered cause for rejection.