
**Hot-dip galvanized and zinc-
aluminium coated high tensile
steel wire for bridge cables —
Specifications**

*Fils d'acier à haut carbone galvanisés ou revêtus de zinc-aluminium
pour câbles de ponts — Spécifications*





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Foreword

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This document was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 17, *Steel wire rod and wire products*.

Hot-dip galvanized and zinc-aluminium coated high tensile steel wire for bridge cables — Specifications

1 Scope

This document specifies the requirements for hot-dip galvanized (hereinafter referred to as zinc coated) and zinc-aluminium coated high tensile wires, which are widely used in parallel wire cables or semi-parallel wire cables for suspension bridges, stay bridges and other structures involving the use of parallel wires.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 752:2004, *Zinc ingots*

ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

ISO 7800, *Metallic materials — Wire — Simple torsion test*

ISO 7802, *Metallic materials — Wire — Wrapping test*

ISO 7989-2, *Steel wire and wire products — Non-ferrous metallic coatings on steel wire — Part 2: Zinc or zinc-alloy coating*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 10474:2013, *Steel and steel products — Inspection documents*

ISO 15630-3:2010, *Steel for the reinforcement and prestressing of concrete — Test methods — Part 3: Prestressing steel*

ISO 16120-1, *Non-alloy steel wire rod for conversion to wire — Part 1: General requirements*

ISO 16120-4, *Non-alloy steel wire rod for conversion to wire — Part 4: Specific requirements for wire rod for special applications*

ISO 22034-2, *Steel wire and wire products — Part 2: Tolerances on wire dimensions*

ASTM B 997, *Standard specification for Zinc-Aluminum alloy in ingot form for hot-dip coatings*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

wire rod

hot rolled steel delivered in coils, used for cold working treatments such as wire drawing

3.2

bare steel wire

product manufactured by cold working *wire rod* (3.1) that is in a suitable metallurgical condition for cold working

3.3

hot-dip zinc coated steel wire

hot-dip galvanized coated steel wire
steel wire that is coated with zinc in a bath of molten zinc

3.4

zinc-aluminium coated steel wire

steel wire that is coated with zinc-aluminium alloy in a bath of molten zinc-aluminium alloy

Note 1 to entry: In this document, “steel wire” or “wire” refers to zinc or zinc-aluminium coated steel wire, unless otherwise specified.

3.5

stabilized wire

steel wire that is given a final thermo-mechanical treatment

3.6

out-of-round

arithmetic difference between the maximum and minimum diameters of the steel wire at the same cross section

3.7

semi-parallel wire cable

specified number of steel wires bundled together with a maximum lay angle of 4°

Note 1 to entry: Semi-parallel wire cables are usually used for cable stayed bridge and suspenders for suspension and arch bridges.

3.8

unit of manufacture

coil of steel wire produced from one coil of *wire rod* (3.1)

3.9

unit of product

coil of steel wire delivered to a customer

Note 1 to entry: The unit of product is either the *unit of manufacture* (3.8) or a smaller coil cut from a unit of manufacture.

3.10

unit of inspection

quantity of product presented at any one time for examination and release purposes

3.11

inspection

conformity evaluation by observation and judgement accompanied as appropriate by measurement, testing or gauging

3.12

factory production control

permanent internal production control exercised by the manufacturer

3.13

standard property

property prescribed as part of *factory production control* (3.12) requirements for every unit of *inspection* (3.10)