

# INTERNATIONAL STANDARD

ISO  
7900

First edition  
1988-12-01



INTERNATIONAL ORGANIZATION FOR STANDARDIZATION  
ORGANISATION INTERNATIONALE DE NORMALISATION  
МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

## Zinc-coated steel wire for fencing

*Fil en acier galvanisé pour clôtures*

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ISO 7900:1988

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Reference number  
ISO 7900:1988 (E)

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7900 was prepared by Technical Committee ISO/TC 17, *Steel*.

# Zinc-coated steel wire for fencing

## 1 Scope

This International Standard specifies requirements for drawn steel wire zinc-coated by the hot-dip process, and intended for use in general-purpose wire fencing, barbed-wire fencing, field fencing and chain link fencing.

The properties specified are not intended to cover wire removed from a fabricated product.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 377 : 1985, *Wrought steel — Selection and preparation of samples and test pieces*.

ISO 404 : 1981, *Steel and steel products — General technical delivery requirements*.

ISO 6892 : 1984, *Metallic materials — Tensile testing*.

ISO 7989 : 1988, *Zinc coatings for steel wire*.

## 3 Designation and other information

### 3.1 Designation

3.1.1 The steel wire shall be designated by the following prefix letters to indicate the application:

- G Wire for general-purpose fencing
- B Wire for barbed-wire fencing
- F Wire for field fencing
- C Wire for chain link fencing.

3.1.2 The following additional letter shall be added to indicate the strength level of the steel wire:

- H Hard
- M Medium
- S Soft.

3.1.3 The zinc coating shall be designated as qualities A, AB, B, C or D, in accordance with ISO 7989.

### 3.2 Ageing

3.2.1 Material covered by this standard will in time exhibit changes in mechanical properties after manufacture, particularly tensile strength and elongation. These changes result from a phenomenon known as strain ageing or strain age hardening, and lead to an increase in tensile strength and a decrease in elongation, compared to the wire immediately after coating with zinc.

3.2.2 It is customary to carry out tests immediately after manufacture. At ordinary temperatures, strain ageing may proceed slowly. Therefore, results of tests performed by the purchaser may be at variance with those reported by the supplier.

### 3.3 Tolerances on zinc-coated wire

It is recognized that the surface of zinc coatings on wire, particularly those produced by hot dipping, are not perfectly smooth or devoid of irregularities. If the diameter tolerances shown in table 2 are rigidly applied to such irregularities that are inherent in the product, unjustified rejection may occur of coated wire which is actually satisfactory. Therefore, it is intended that these tolerances be used in measuring the uniform areas of the zinc-coated wire.

## 4 Ordering

The purchaser shall state in his enquiry and order

- a) the number of this International Standard;
- b) the type of wire (see 3.1.1 and 3.1.2);

- c) the nominal diameter of the wire;
- d) the quality of the coating (see 3.1.3);
- e) the quantity required and delivery instructions;
- f) the coil size required.

## 5 Requirements

### 5.1 Manufacturing process

Unless otherwise agreed in the order, the process used in making the steel is left to the discretion of the manufacturer. When the user so requests, he shall be informed what steel-making process is being used.

### 5.2 Defects

The wire shall be free from internal or surface defects likely to have an adverse effect on its subsequent processing or end use.

### 5.3 Tensile strength

5.3.1 The tensile strength shall be in accordance with the requirements of table 1 for the appropriate wire type and nominal diameter.

The ordered tensile strength range shall not be more than 310 N/mm<sup>2</sup> and shall lie within the limits given in table 1.

5.3.2 The tensile strength shall be calculated using the nominal diameter of the wire.

### 5.4 Zinc coating

The mass and quality of the zinc coating shall be in accordance with ISO 7989.

## 5.5 Dimensional tolerances

The tolerance on diameter with respect to coating quality shall be in accordance with table 2.

Table 2 — Dimensional tolerances

Values in millimetres

Nominal diameter		Tolerance on diameter, ±	
		Zinc coating quality	
over	up to & incl.	A, AB	B, C, D
—	1,60	0,08	0,05
1,60	2,50	0,10	0,07
2,50	3,15	0,11	0,08
3,15	5,00	0,13	0,10

## 6 Acceptance testing

### 6.1 Selection and preparation of samples and test pieces

The general conditions given in ISO 377 for the selection and preparation of samples and test pieces shall apply.

### 6.2 Tensile test

The tensile test shall be carried out in accordance with ISO 6892.

### 6.3 Testing of zinc coating

The coating mass and coating adhesion shall be tested in accordance with ISO 7989.

### 6.4 Retests

For retests, ISO 404 shall apply.

Table 1 — Tensile strength

Wire type		Nominal diameter mm	Tensile strength N/mm <sup>2</sup> *)		Remarks
Name	Designation		min.	max.	
General-purpose fencing	GS	3,15/5,00	350	660	—
	GM	2,50	750	1 050	—
	GH	1,50/3,15	1 000	1 700	—
Barbed-wire fencing	BS	1,40/2,80	350	660	Barb and line wire
	BH	1,50/1,80	900	1 500	Line wire
Field fencing	FS	1,90/4,00	350	660	Stay and line wire
	FM	1,90/4,00	550	900	Line wire
	FH	2,50/4,00	900	1 250	Line wire
Chain link fencing	CS	2,00/5,00	350	660	—

\*) 1 N/mm<sup>2</sup> = 1 MPa

## 6.5 Certification of the tests

ISO 404 is valid, acceptable documents being

- a statement of compliance with the order, or
- an inspection certificate, or
- an inspection report.

## 7 Marking

7.1 The general requirements for identification and marking contained in ISO 404 shall apply.

7.2 Unless otherwise stated, the following information shall be shown on a tag securely attached to each coil:

- a) the manufacturer's name or identifying brand;
- b) the number of this International Standard;
- c) the type of wire and the coating quality;
- d) the nominal wire diameter.

## 8 Complaints

The requirements for dealing with complaints laid down in ISO 404 shall apply.

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**UDC 669.146-124-427 : 669.586.5 : 672.85**

**Descriptors:** fences, steels, steel products, wire, specifications, designation, marking.

Price based on 3 pages

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