
S cinkom ali cinkovimi zlitinami prevlečena žica iz nelegiranega jekla za armiranje močnostnih in telekomunikacijskih kablov - 1. del: Zemeljski kabli

Zinc or zinc alloy coated non-alloy steel wire for armouring either power cables or telecommunication cables - Part 1: Land cables

Mit Zink oder Zinklegierung überzogener unlegierter Stahldraht zur Bewehrung von Strom- und Fernmeldekabeln - Teil 1: Erdverlegte Kabel

Fils en acier non allié, revetu de zinc ou d'alliage de zinc, pour armure de câbles destinés au transport d'énergie ou aux télécommunications - Partie 1: Câbles terrestres

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Ta slovenski standard je istoveten z: EN 10257-1:1998

ICS:

29.060.20	Kabli	Cables
77.140.65	Jeklene žice, jeklene vrvi in verige	Steel wire, wire ropes and link chains

SIST EN 10257-1:2000**en**

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EUROPEAN STANDARD

EN 10257-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 1998

ICS 77.140.70

Descriptors: wire, armatures, wire rope, galvanizing, zinc alloys, designation, base metal, mechanical properties, dimensions, dimensional tolerances, electrical resistance, inspection, tests

English version

Zinc or zinc alloy coated non-alloy steel wire for armouring either power cables or telecommunication cables - Part 1: Land cables

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This European Standard was approved by CEN on 27 March 1998.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword	3
1 Scope	4
2 Normative references	4
3 Definitions	5
4 Information to be supplied by the purchaser	5
5 Designation	6
6 Manufacture	6
7 Requirements	6
8 Sampling and testing	10
9 Inspection and documentation	10
10 Methods of tests	10
11 Packing and identification	11

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REPUBLIKA SLOVENIJA
AGENCIJA REPUBLIKE SLOVENIJE
ZA VARNOST IN KVALITETO
ANALIZI
.....
SIST EN 10257-1:2000
BYTARILSKI KODIRAN NA VARNOST

0003 40



Foreword

This European Standard has been prepared by Technical Committee ECISS/TC 30 "Steel wires", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 1998, and conflicting national standards shall be withdrawn at the latest by October 1998.

This Standard is in two Parts.

- This Part 1 of the Standard applies to wire for armouring land cables;
- Part 2 specifies requirements for wire for armouring submarine cables.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This Part of this European Standard specifies requirements for the properties of non-alloy carbon zinc or zinc alloy coated steel wire used primarily for the armouring of either land power or telecommunication cables i.e. cables intended to be buried in the ground, in diameters ranging from 0,30 mm to 4,00 mm. The nominal wire diameters are specified in table 3.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 10016-1	Non alloy steel rods for drawing and/or cold rolling Part 1: General requirements
EN 10016-2	Non-alloy steel rods for drawing and/or cold rolling Part 2: Specific requirements for general purpose rod
EN 10016-3	Non-alloy steel rods for drawing and/or cold rolling Part 3: Specific requirements for rimmed or rimmed substitute for low carbon steel rod
EN 10021	General technical delivery conditions for iron and steel products
EN 10204	Metallic products - Types of inspection documents
EN 10218-1	Steel wire and wire products - General - Part 1: Test methods
EN 10218-2	Steel wire and wire products - General - Part 2: Wire dimensions and tolerances
prEN 10244-1	Steel wire and wire products - Non-ferrous metallic coatings on wire Part 1: General principles
prEN 10244-2	Steel wire and wire products - Non-ferrous metallic coatings on wire Part 2: Zinc and zinc alloy coatings
IEC 468	Method of measurement of resistivity of metallic materials

- IEC 60502-1 Power cables with extruded insulation and their accessories for rated voltages from 1 kV ($U_m = 1.2$ kV) up to 30 kV ($U_m = 36$ kV)
Part 1: Cables for voltages of 1 kV ($U_m = 1.2$ kV) and 3 kV ($U_m = 3.6$ kV)
- IEC 60502-2 Power cables with extruded insulation and their accessories for rated voltages from 1 kV ($U_m = 1.2$ kV) up to 30 kV ($U_m = 36$ kV)
Part 2: Cables for rated voltages from 6 kV ($U_m = 7.2$ kV) up to 30 kV ($U_m = 36$ kV)

3 Definitions

For the purpose of this standard, the following definitions apply:

- 3.1 **coil/reel/spool:** One continuous length of wire wound in approximately concentric rings.
- 3.2 **batch:** Any quantity of finished wire presented for examination and tested at any one time.

4 Information to be supplied by the purchaser

When ordering wire to this European Standard, the purchaser shall specify:

- a) The designation (see clause 5);
- b)..... If coating uniformity is to be measured;
- c) If electrical resistance is to be measured;
- d) The quantity in appropriate units;
- e) The unit weight of coils;
- f) Instructions for strapping and packaging;
- g) If required, identity for traceability;
- h) Surface condition (see clause 7.3);
- i) Agreed quality characteristics (see clause 8);
- j) Inspection document requirements.

5 Designation

The steel wire for land cable shall be designated by:

- a) the number of this European Standard i.e. EN 10257-1;
- b) the nominal wire diameter;
- c) the wire coating type to prEN 10244-2.

Example: Steel wire for land cable to EN 10257-1, of nominal wire diameter of 0,45 mm, zinc coated to prEN 10244-2 class A.

EN 10257-1-0,45 - Zn - prEN 10244-2 class A.

6 Manufacture

6.1 Non-alloy steel

The steel wire shall be cold drawn from plain carbon steel rod produced to EN 10016-1, EN 10016-2 or EN 10016-3 and capable of achieving the physical properties required by this standard. The steel rod shall be capable of being satisfactorily butt welded.

6.2 Welds in coils

The coils as delivered, shall contain no joints other than properly dressed welds i.e. the original wire diameter shall be retained.

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7 Requirements

7.1 Mechanical properties

7.1.1 Tensile strength and elongation

The tensile strength and elongation of the wires shall be in accordance with table 1. The variation within one batch shall not be more than 150 N/mm².

Table 1: Mechanical properties

Nominal wire diameter mm	Tensile strength N/mm ²	Elongation after fracture %
$d \leq 0,70$	320 to 500	7,5
$0,70 < d \leq 0,90$	340 to 500	7,5
$d > 0,90$	340 to 500	10,0

7.1.2 Torsion

The wire shall withstand without breaking, not less than the minimum number of turns given in table 2.

These minima are based on 40 turns in a gauge length of 100 d, where d is greater than 0,71 and less than or equal to 4,00 mm, and on 27 turns in 100 d for sizes equal or smaller than 0,71 mm where d is the wire diameter.

Table 2: Minimum number of turns to fracture

Nominal wire diameter mm	Gauge length mm	Minimum number of turns
0,30	50	45
0,45	75	45
0,71	75	42
0,90	75	33
1,25	75	24
1,60	150	37
2,00	150	30
2,50	150	24
3,15	150	19
4,00	150	15

7.2 Nominal diameter and tolerances

The preferred nominal diameters of finished wire and the tolerances on diameter are given in table 3. Other diameters may be used, e.g. those specified in IEC 60502-1 or in IEC 60502-2.

NOTE: The tolerances correspond to T1 of EN 10218-2 (table 1).