



SLOVENSKI STANDARD SIST EN 10257-2:2000

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Zinc or zinc alloy coated non-alloy steel wire for armouring either power cables or telecommunication cables - Part 2: Submarine cables

Mit Zink oder Zinklegierung überzogener unlegierter Stahldraht zur Bewehrung von Strom- und Fernmeldekabeln - Teil 2: Unterseekabel

Fils en acier non allié revêtu de zinc ou d'alliage de zinc pour armure de câbles destinés au transport d'énergie ou aux télécommunications - Partie 2: Câbles sous-marins

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Ta slovenski standard je istoveten z: EN 10257-2:1998

ICS:

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

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en

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EUROPEAN STANDARD

EN 10257-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 1998

ICS 77.140.65

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

English version

Zinc or zinc alloy coated non-alloy steel wire for armouring either power cables or telecommunication cables - Part 2: Submarine cables

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This European Standard was approved by CEN on 25 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.

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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.



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

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

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10257-2-2000



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 2 of the Standard applies to wire for armouring submarine cables;
- Part 1 applies to wire for armouring land 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 zinc or zinc alloy coated steel wires used for the armouring of either submarine power or telecommunication cables in diameters ranging from 2,12 to 8,50 mm. The nominal wire diameters are specified in tables 2, 3 and 4.

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

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) The quantity in appropriate units;
- d) The unit weight of coils;
- e) Instructions for strapping and packaging;
- f) If required, identity for traceability;
- g) Surface condition (see clause 7.3);
- h) Agreed quality characteristics (see clause 8);
- i) Inspection document requirements.

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5 Designation

The steel wire for submarine cable shall be designated by:

- a) the number of this European Standard i.e. EN 10257-2;
- b) the tensile strength grade;
- c) the nominal wire diameter;
- d) the wire coating type.

Example: Wire for submarine cable to EN 10257-2, grade 85, 2,24 mm diameter zinc coated to prEN 10244-2 class A.

EN 10257-2 - 85 - 2,24 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

For grades 34 and 65 only, one dressed weld per coil shall be allowed after drawing and before coating. Such a weld shall not be less than 100 m from either end of the coil.

No weld shall be made after drawing on grades 85, 105, 125, 145 and 165.

7 Requirements**7.1 Mechanical properties****7.1.1 Tensile strength**

The tensile strength of the wires measured on the actual diameter shall be as given in table 1 for the appropriate grade.

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Table 1: Tensile strength of wire grades
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Grade	Tensile strength range N/mm ²
34	$340 < R_m \leq 540$
65	$650 < R_m \leq 850$
85	$850 < R_m \leq 1050$
105	$1050 < R_m \leq 1250$
125	$1250 < R_m \leq 1450$
145	$1450 < R_m \leq 1650$
165	$1650 < R_m \leq 1900$

NOTE 1: If other minima are ordered a 200 N/mm² range shall apply.

NOTE 2: If tensile strength minima are ordered other than those specified and the tensile strength of the ordered grade is less than or equal to 100 N/mm² above the minimum tensile strength of the nearest lower specified grade then the properties of that grade shall apply. If the minimum tensile strength of the required grade is more than 100 N/mm² above the minimum tensile strength of the nearest lower specified grade then the higher grade properties shall apply.

7.1.2 *Elongation*

Elongation measured after fracture shall be not less than that given in tables 2, 3 or 4 for the grade and diameter of wire being tested.

7.1.3 *Torsion*

When tested in accordance with 10.3.1, the wire shall withstand without breaking not less than the minimum number of turns given in tables 2, 3 and 4 for the wire being tested.

7.1.4 *Steel ductility wrap test*

When subjected to a steel ductility wrap test, test samples of grade 85, 105, 125, or 145 shall withstand being closely wrapped by 8 turns around their own diameter. A test sample of grade 165 shall withstand being closely wrapped around two times its own diameter. No sign of fracture of the base metal shall be evident.

7.2 *Nominal diameters and tolerances*

The preferred nominal diameters of finished wire and the tolerances on diameter shall be as specified in tables 2, 3 and 4, depending on the tensile grades.

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

It is recognized that thick coatings, obtained in the hot dip process, may not be entirely free from surface irregularities, and, provided the latter do not go beyond the limits of good practice, (i.e. isolated and not of a repetitive nature), they shall not be a cause for rejection. Persistent lumpy galvanizing or bambooning shall be cause for rejection.

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