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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

The European Standard EN 10257-2:1998 has the status of a Swedish Standard. This document contains the official English version of EN 10257-2:1998.

Swedish Standards corresponding to documents referred to in this Standard are listed in "Catalogue of Swedish Standards", issued by SIS. The Catalogue lists, with reference number and year of Swedish approval, International and European Standards approved as Swedish Standards as well as other Swedish Standards.

Förzinkad tråd av lågkolhaltigt stål för armering av kabel – Del 2: Sjökabel

Europastandarden EN 10257-2:1998 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 10257-2:1998.

Motsvarigheten och aktualiteten i svensk standard till de publikationer som omnämns i denna standard framgår av "Katalog över svensk standard", som ges ut av SIS. I katalogen redovisas internationella och europeiska standarder som fastställts som svenska standarder och övriga gällande svenska standarder.

ICS 77.140.65

EUROPEAN STANDARD
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EN 10257-2

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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**

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

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

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.

The European Standards exist 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.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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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.

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.

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.

Table 1: Tensile strength of wire grades

Grade	Tensile strength range N/mm ²
34	340 < R _m ≤ 540
65	650 < R _m ≤ 850
85	850 < R _m ≤ 1050
105	1050 < R _m ≤ 1250
125	1250 < R _m ≤ 1450
145	1450 < R _m ≤ 1650
165	1650 < R _m ≤ 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.