



SLOVENSKI STANDARD

SIST HD 532 S1:1996

01-januar-1996

Hard drawn aluminium wire for overhead line conductors

Hard-drawn aluminium wire for overhead line conductors

Hartgezogene Aluminiumdrähte für Freileitungsseile

Fil d'aluminium écroui dur pour conducteurs de lignes aériennes

Ta slovenski standard je istoveten z: **HD 532 S1:1989**

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ICS:

29.060.10	Žice	Wires
29.240.20	Daljnovodi	Power transmission and distribution lines

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en

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**HARD-DRAWN ALUMINIUM WIRE FOR OVERHEAD LINE
 CONDUCTORS**

Fil d'aluminium écroui dur pour
 conducteurs de lignes aériennes

Hartgezogene Aluminiumdrähte
 für Freileitungsseile

BODY OF THE HD

The Harmonization Document consists of:

- IEC 889 (1987) ed 1; IEC/TC 7, not appended

This Harmonization Document was approved by CENELEC on 12 June 1989.

The English and French versions of this Harmonization Document are provided by the text of the IEC publication and the German version is the official translation of the IEC text.

According to the CENELEC Internal Regulations the CENELEC member National Committees are bound:

to announce the existence of this Harmonization Document at national level by or before 1989-12-01

to publish their new harmonized national standard by or before 1990-06-01

to withdraw all conflicting national standards by or before 1990-06-01.

Harmonized national standards are listed on the HD information sheet, which is available from the CENELEC National Committees or from the CENELEC Central Secretariat.

The CENELEC National Committees are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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INTERNATIONAL STANDARD

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Hard-drawn aluminium wire for overhead line conductors

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HARD-DRAWN ALUMINIUM WIRE FOR OVERHEAD LINE
CONDUCTORS**

FOREWORD

- 1) The formal decisions or agreements of the I E C on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the I E C expresses the wish that all National Committees should adopt the text of the I E C recommendation for their national rules in so far as national conditions will permit. Any divergence between the I E C recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

PREFACE

This standard has been prepared by I E C Technical Committee No. 7: Bare Aluminium Conductors.

This standard replaces Clauses 3, 5, 6 and 13, Sub-clause 12.2 and the requirements of Clause 4, Sub-clauses 8.1, 12.1 and Item *c*) of Appendix A of I E C Publication 207 (1966): Aluminium Stranded Conductors. It also replaces Clauses 3, 6 and 15, Sub-clause 7.1 and Item *i*) of Sub-clause 13.4 and the requirements of Clause 5, Sub-clauses 9.1, 13.2 and Item *c*) of Appendix A of I E C Publication 209 (1966): Aluminium Conductors, Steel-reinforced.

The text of this standard is based on the following documents:

Six Months' Rule	Report on Voting
7(CO)422	7(CO)425

Further information can be found in the Report on Voting indicated in the table above.

The following I E C Publication is quoted in this standard:

Publication No. 468 (1974): Method of Measurement of Resistivity of Metallic Materials.

Other publications quoted:

ISO Standard 6892 (1984): Metallic Materials — Tensile Testing.

ISO Standard 7802 (1983): Metallic Materials — Wire — Wrapping Test.

HARD-DRAWN ALUMINIUM WIRE FOR OVERHEAD LINE CONDUCTORS

1. Scope

This standard is applicable to hard-drawn aluminium wires for the manufacture of stranded conductors for overhead power transmission purposes. It specifies the mechanical and electrical properties of wires in the diameter range 1.25 mm to 5.00 mm.

2. Values for hard-drawn aluminium wire

For calculation purposes the following values for hard-drawn aluminium wire shall be used.

Resistivity at 20°C, maximum:	28.264 nΩm (corresponding to 61.0% IACS)*
Density at 20°C:	2.703 kg/dm ³
Coefficient of linear expansion:	23 × 10 ⁻⁶ per degree Celsius
Constant-mass temperature coefficient of resistance at 20°C:	0.004 03 per degree Celsius

* International Annealed Copper Standards.

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3. Material

The wires shall be of aluminium of the requisite purity to achieve the mechanical and electrical properties specified hereinafter. The aluminium content shall be not less than 99.5%.

4. Freedom from defects

The wires shall be smooth and free from all imperfections not consistent with good commercial practice.

5. Diameter and tolerance on diameter

The nominal diameter of the wires shall be expressed in millimetres to two decimal places.

Each measurement of wire diameter shall not depart from the nominal diameter by more than the following amounts:

Nominal diameter		Tolerance
Over (mm)	Up to and including (mm)	
— 3.00	3.00 —	± 0.03 mm $\pm 1\%$

For the purpose of checking compliance with the above requirement, the diameter shall be determined by two measurements at right angles taken at the same cross-section.

6. Length and tolerance on length

The nominal length of each coil or reel of wire and the tolerance on length shall be the subject of agreement between manufacturer and purchaser.

7. Joints

Joints may be made prior to final drawing. A joint could also be made in the finished wire, provided that:

- a) the coil is 500 kg or heavier,
- b) there is not more than one joint in such coils,
- c) not more than 10% of such coils shall contain a joint,
- d) when requested by the purchaser, the manufacturer shall provide evidence that the joints have a tensile strength of not less than 130 MPa.

The coils containing a joint made in the finished wire shall be clearly identified.

8. Sampling

Samples for the tests specified in Clauses 10 and 11 shall be taken by the manufacturer from 10% of the individual lengths of wire included in any one consignment.

Alternatively, or when a quality assessment procedure is operated, the sampling rate shall be the subject of agreement between manufacturer and purchaser.

9. Place of testing

Unless otherwise agreed between purchaser and manufacturer at the time of ordering, all tests shall be carried out at the manufacturer's works.