



SLOVENSKI STANDARD
SIST EN ISO 2307:2005

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SIST EN 919:1999

Vlknene vrvi - Ugotavljanje nekaterih fizikalnih in mehanskih lastnosti (ISO 2307:2005)

Fibre ropes - Determination of certain physical and mechanical properties (ISO 2307:2005)

Faserseile - Bestimmung einiger physikalischer und mechanischer Eigenschaften (ISO 2307:2005)

Cordages en fibres - Détermination de certaines caractéristiques physiques et mécaniques (ISO 2307:2005)

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59.080.50 Vrvi Ropes

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 2307

February 2005

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Supersedes EN 919:1995

English version

Fibre ropes - Determination of certain physical and mechanical properties (ISO 2307:2005)

Cordages en fibres - Détermination de certaines caractéristiques physiques et mécaniques (ISO 2307:2005)

Faserseile - Bestimmung einiger physikalischer und mechanischer Eigenschaften (ISO 2307:2005)

This European Standard was approved by CEN on 3 February 2005.

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

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EN ISO 2307:2005 (E)

Foreword

This document (EN ISO 2307:2005) has been prepared by Technical Committee CEN/TC 248 "Textiles and textile products", the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 38 "Textiles".

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of an identical text or by endorsement, at the latest by August 2005, and conflicting national standards shall be withdrawn at the latest by August 2005.

This document supersedes EN 919:1995.

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

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INTERNATIONAL
STANDARD

ISO
2307

Third edition
2005-02-15

**Fibre ropes — Determination of certain
physical and mechanical properties**

*Cordages en fibres — Détermination de certaines caractéristiques
physiques et mécaniques*

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ISO 2307:2005(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 2307 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 248, *Textiles and textile products*, in collaboration with Technical Committee ISO/TC 38, *Textiles*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 2307:1990), which has been technically revised.

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Fibre ropes — Determination of certain physical and mechanical properties

1 Scope

This International Standard specifies, for ropes of different kinds, a method of determining each of the following characteristics:

- linear density;
- lay length;
- braided pitch;
- elongation;
- breaking force.

The linear density, lay length and braided pitch are measured with the rope under a specified tension called the reference tension, as specified in Annex A.

The elongation corresponds to the measured increase in length of the rope when the tension to which it is subjected is increased from an initial value (reference tension) to a value equal to 50 % of the minimum specified breaking strength of the rope.

The breaking force is the maximum force registered (or reached) during a breaking test on the test piece, carried out on a tensile testing machine with constant rate of traverse of the moving element. The breaking force values given in the tables of rope specifications are only valid when this type of testing machine is used.

When it is not possible to test the whole section of rope, the method described in Annex B may be used, subject to agreement between the parties involved.

This International Standard also provides a method for measuring water repellency, lubrication and finish content and heat setting treatment when requested by the customer.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 1968, *Fibre ropes and cordage — Terms and definitions*

ISO 9554:—¹⁾, *Fibre ropes — General specification*

1) To be published. (Revision of ISO 9554:1991)

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1968 apply.

4 Principle

4.1 Calculation of the linear density

The linear density is obtained by measurement of the mass and the length, under a reference tension, of a conditioned test piece (see Clause 9 and Annex C).

4.2 Measurement of the lay length and braided pitch length

This measurement is taken at the time of application of the reference tension.

4.3 Measurement of the elongation of the rope

This measurement is taken by comparing the lengths of a section of the test piece that has been subjected successively to

- a) the reference tension;
- b) a tension equal to 50 % of the minimum specified breaking force for the rope.

4.4 Measurement of the breaking force

This measurement is carried out by increasing the tension in 4.3 b) to the breaking point.

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5 Apparatus

5.1 Tensile testing machine, accommodating the assumed breaking force of the rope, which allows a constant rate of traverse of the moving element in accordance with 9.5 and measurement of breaking force to an accuracy of ± 1 %.

Different types of tensile testing machines may be used:

- pulley-type grip (“cors de chasse” testing machine);
- testing machine with bollards for eye splices;
- wedge-grip testing machine.

In the case of a “cors de chasse” tensile testing machine, the diameter of the pulleys or catches holding down the test pieces shall be equal to at least 10 times that of the rope being tested.

In the case of a testing machine with bollards, the diameter of the bollards passing through the eye-spliced test pieces shall be at least twice the diameter of the rope being tested.

5.2 Balance, allowing measurement of mass to an accuracy of ± 1 %.

6 Sampling

6.1 Sample size

When specified by the purchaser, a lot sample for acceptance testing shall be taken at random in accordance with 6.4.

6.2 Sample unit

If required, test samples shall be taken from each shipping unit in the lot in the number and the length required to perform the specified tests. The test samples shall be included in the delivered mass or length.

As an alternative, the manufacturer's production and inspection records may be used, if agreed upon the purchaser and the manufacturer.

6.3 Composition of the batch to be sampled

Samples shall be taken from a homogeneous batch, i.e. consisting of ropes of the same size and same dimensions and which have been subject to the same series of manufacturing operations and the same control procedure.

6.4 Selection of samples

Take N_S number of samples at random from the batch in accordance with Equation (1):

$$N_S = 0,4 \sqrt{N} \quad (1)$$

where N is the batch size, expressed as the number of 220-m coils.

When the calculated value of N_S is not a whole number, the number obtained shall be rounded to the nearest whole number.

EXAMPLE 27,5 and 30,35 are rounded to 28 and 30, respectively.

Where $N_S < 1$, take one sample length.

7 Test pieces

7.1 Length

The test piece shall be of adequate length to give an effective length, L_u (see 9.2), between terminations which is at least equal to that given in Table 1, when mounted on the tensile testing machine (see Figure 1).