



**SLOVENSKI STANDARD**  
**SIST EN ISO 9554:2005**

**01-maj-2005**

**BUXca Yý U**  
**SIST EN 701:1999**

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**Vlaknene vrvi - Splošne zahteve (ISO 9554:2005)**

Fibre ropes - General specifications (ISO 9554:2005)

Faserseile - Allgemeine Festlegungen (ISO 9554:2005)

Cordages en fibres - Spécifications générales (ISO 9554:2005)

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**ICS:**

59.080.50      Vrvi      Ropes

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 9554**

February 2005

ICS 59.080.50

Supersedes EN 701:1995

English version

## Fibre ropes - General specifications (ISO 9554:2005)

Cordages en fibres - Spécifications générales (ISO 9554:2005)

Faserseile - Allgemeine Festlegung (ISO 9554:2005)

This European Standard was approved by CEN on 17 December 2004.

CEN members are bound to comply with the CEN/GENELEC 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, 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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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN ISO 9554:2005 (E)

## Foreword

This document (EN ISO 9554:2005) 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 701:1995.

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**  
**9554**

Second edition  
2005-02-01

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## Fibre ropes — General specifications

*Cordages en fibres — Spécifications générales*

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**ISO 9554:2005(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 9554 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 38, *Textiles*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 9554:1991), which has been technically revised.

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# Fibre ropes — General specifications

## 1 Scope

This International Standard specifies the general characteristics of fibre ropes and their constituent materials. It is intended to be used in conjunction with the standards for the individual types of fibre rope, which cover the physical properties and specific requirements for that particular product type.

This International Standard also gives some information on the use of fibre ropes and also on their inspection and retirement criteria.

This International Standard does not intend to address all of the safety matters associated with its use. It is the responsibility of the user to select a rope type of the size and with the physical properties to meet the requirements of the application and to determine the applicability of regulatory limitations prior to its use.

## 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.

- [SIST EN ISO 9554:2005](https://www.iso.org/standard/7198716-c93e-4caf-a560-a64412cb5ca6/sist-en-iso-9554-2005)  
<https://www.iso.org/standard/7198716-c93e-4caf-a560-a64412cb5ca6/sist-en-iso-9554-2005>
- ISO 1140, *Fibre ropes — Polyamide — 3-, 4- and 8-strand ropes*
- ISO 1141, *Fibre ropes — Polyester — 3-, 4- and 8-strand ropes*
- ISO 2307, *Fibre ropes — Determination of certain physical and mechanical properties*
- EN 14687, *Mixed polyolefin fibre ropes*

## 3 Manufacture

### 3.1 Constituent materials

The following materials are considered in this International Standard:

- a) natural fibres:
- sisal,
  - manila,
  - hemp;

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b) man-made fibres:

- polyamide,
- polyester,
- polypropylene,
- polyethylene,
- mixed polyolefin.

Many new fibres are available. Specific application should involve technical discussions with rope manufacturers (see Annex A).

**3.2 Construction and structure**

Unless otherwise specified, 3-, 4- and 6-strand laid ropes shall be Z-twist (right-hand lay), their strands S-twist and their roping yarns Z-twist.

The 8-strand braided ropes shall consist of four S-twist strands and four Z-twist strands arranged so that S-twist strands alternate (individually or on pairs) with Z-twist strands (individually or on pairs).

The 12-strand braided ropes shall consist of six S-twist strands and six Z-twist strands arranged so that S-twist strands alternate (individually or on pairs) with Z-twist strands (individually or on pairs).

A double-braided rope shall consist of a number of strands that are braided to form a core, around which are braided additional strands to form a sheath. The core lies coaxially within the sheath. The number of strands varies, based upon the size of the rope.

Each strand shall consist of an equal number of rope yarns sufficient to provide the characteristics specified in the International and European Standards dealing with each fibre. For ropes of reference number 36 or higher, the number of yarns in each strand may differ by one yarn or  $\pm 2.5\%$  from the mean number of yarns in the strand.

The ropes and their strands shall be continuous, without splice for standard delivered lengths or shorter lengths.

Yarns may be joined as necessary.

NOTE National legislations can place additional requirements and rope construction.

**3.3 Treatment****3.3.1 Polyamide and polyester ropes**

**3.3.1.1** Polyamide and polyester ropes shall be produced in such a way as to ensure the lay and the dimensional stability. Except if type 2 is ordered, a heat setting shall be used to ensure that subsequent shrinkage in use is minimal.

**3.3.1.2** Polyamide and polyester laid ropes that are required to have a heat setting on the rope to ensure lay and dimensional stability are designated as type 1 ropes in ISO 1140 and ISO 1141.

**3.3.1.3** In other cases, polyamide and polyester laid ropes that are not required to have a heat setting on the rope are designated type 2 ropes in ISO 1140 and ISO 1141.

In this case, stabilization, if any, may occur for the fibre or for the twisted yarn.

**3.3.1.4** The ropes shall be supplied in their natural state without additives to weight the rope or coating treatment.

The fibre producer or the rope manufacturer may apply lubricants for enhanced performance. The total amount of additives or extractable materials shall not exceed 2,5 %.

**3.3.1.5** The colour of the rope shall be natural unless otherwise requested.

Upon request of the purchaser, the manufacturer may use a coating or impregnation of the product for special applications.

**3.3.1.6** The figures for linear density and minimum breaking force are the same for type 1 and type 2 ropes.

### **3.3.2 Polypropylene and polyethylene ropes**

Polypropylene and polyethylene ropes shall be protected against deterioration due to sunlight. Any ultraviolet-(UV-) inhibiting system may be used, such as light stabilizers, pigmentation using carbon black, iron(III) oxide ( $\text{Fe}_2\text{O}_3$ ) or any other colouring product or special inhibitor.

The inhibiting system used should ensure the expected performance in usage under the foreseen geographical areas for applications provided that the manufacturer is kept informed by the user.

### **3.3.3 Manila and sisal**

#### **3.3.3.1 General**

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All ropes of manila and of sisal shall be made exclusively of new fibres.

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#### **3.3.3.2 Manila** <https://standards.iteh.ai/catalog/standards/sist/971987d6-c93e-4caf-a560-a64412cb5ca6/sist-en-iso-9554-2005>

A cordage oil lubricant of suitable quality shall be applied. The lubricant shall not impart an offensive odour to the finished rope. The percentage of extractable matter based on the dry weight of the rope shall not be less than 11,5 % nor more than 16,5 %.

When specified, the rope shall have a mildew-resistant treatment.

Anti-bacterial additives for manila may be added to extend the performance of the natural fibre when requested by the purchaser.

#### **3.3.3.3 Sisal**

A cordage oil lubricant of suitable quality shall be applied. The lubricant shall not impart an offensive odour to the finished rope. The percentage of extractable matter based on the dry weight of the rope shall not be more than 11,5 % for an un-oiled product and not more than 16,5 % for an oiled product.

When specified, the rope shall be free from any oils and sold as un-oiled rope.

Anti-bacterial additives for sisal may be added to extend the performance of the natural fibre when requested by the purchaser.

### **3.4 Workmanship**

**3.4.1** The finished rope shall contain no cuts, kinks, soft spots caused by change in lay or pitch length, hockles, chafed or damaged sections, or broken, loose or projecting ends in the rope or the strands.