



# SLOVENSKI STANDARD SIST EN ISO 4167:2006

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## **Poliolefinske poljedelske povezne vrvice (ISO 4167:2006)**

Polyolefin agricultural twines (ISO 4167:2006)

Polyolefin-Erntegarne (ISO 4167:2006)

Ficelles agricoles en polyoléfines (ISO 4167:2006)

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

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English Version

## Polyolefin agricultural twines (ISO 4167:2006)

Ficelles agricoles en polyoléfines (ISO 4167:2006)

Polyolefin-Erntegarne (ISO 4167:2006)

This European Standard was approved by CEN on 27 February 2006.

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 4167:2006 (E)****Foreword**

This document (EN ISO 4167:2006) 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of an identical text or by endorsement, at the latest by September 2006, and conflicting national standards shall be withdrawn at the latest by September 2006.

This document supersedes EN 906:1996.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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# INTERNATIONAL STANDARD

**ISO  
4167**

Second edition  
2006-03-01

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## **Polyolefin agricultural twines**

*Ficelles agricoles en polyoléfines*

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**ISO 4167:2006(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 4167 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 second edition cancels and replaces the first edition (ISO 4167:1979), of which it constitutes a technical revision.

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# Polyolefin agricultural twines

## 1 Scope

This International Standard specifies the principal properties of polyolefin agricultural twines, the test methods which permit their verification, and the form of delivery for the twines.

## 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 2, *Textiles — Designation of the direction of twist in yarns and related products*

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

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **agricultural twine**

simple yarn intended to be used in agriculture, notably for binding the bundles on automatic pick-up balers or on similar machines

### 3.2

#### **batch**

definite quantity of twine produced under conditions which are presumed uniform

### 3.3

#### **laboratory sample**

total selection of samples from a batch intended for testing in the laboratory

### 3.4

#### **polyolefin**

principally polypropylene (PP) and high density polyethylene (PE)

### 3.5

#### **specimen**

quantity of twine on which a test conforming to the requirements of this International Standard is carried out

## ISO 4167:2006(E)

### 4 Designation

A twine shall be designated by

- the words “agricultural twine”,
- the number of this International Standard, i.e. ISO 4167,
- the material from which the agricultural twine is made, and
- the nominal runnage in metres (m) per kilogram (kg) of the agricultural twine.

EXAMPLE Designation example:

A polypropylene (PP) agricultural twine having a nominal runnage of 350 m/kg is designated as follows:

agricultural twine ISO 4167 - PP - 350

### 5 Raw materials

The raw material used for the manufacture of twine shall consist of polyolefin. Adequate stabilization against degradation by sunlight shall be incorporated.

Any ultraviolet (UV) inhibitor system as well as colour pigment may be used.

Used colour pigment and stabilizers should not be toxic.

NOTE Attention is drawn to the fact that in some areas of the world, a more stringent level of stabilization may be necessary than in others.

The colour of the twine shall be distinguishable from straw and grass.

### 6 Manufacture

Each spool of twine shall be capable of working with continuity throughout its length. The twine shall have a Z twist in accordance with ISO 2.

Twine should always be removed from the centre of a spool in an anti-clockwise direction.

### 7 Technical properties

The methods used for measuring the technical properties of the agricultural twine shall be as given in Table 1.

Table 2 shows indicative characteristics of some twines only; others shall be calculated in accordance with the formulae in this clause and in 9.1.5.

In order to assure a minimum quality level, the following formulae are given for determining the technical characteristics of the agricultural twines.

For the minimum twine breaking force requirement, the following formula shall be used:

$$F_{\text{twine}} = \frac{31\,450}{n} + 8$$

where

$F_{\text{twine}}$  is the minimum twine breaking force, in decanewtons rounded to the nearest integer;

$n$  is the specified nominal runnage of the twine, in metres per kilogram, in accordance with the procedure given in 9.1.

For the minimum average knot breaking force requirement, the following formula shall be used:

$$F_{\text{knot}} = 0,55 F_{\text{twine}}$$

where  $F_{\text{knot}}$  is the minimum average knot breaking force, in decanewtons rounded to the nearest integer.

For the nominal runnage tolerance requirement, a tolerance of  $\pm 8\%$  rounded to the nearest integer shall be allowed.

**Table 1 — Technical properties of polyolefin agricultural twines**

Relevant property	Units	Values of properties Example: Agricultural twine ISO 4167 - PP - 350	Method of test
Linear density	tex	2 857 <sup>+249</sup> <sub>-211</sub>	See 9.1.
Runnage	m/kg	350 $\pm$ 28	See 9.1.
Minimum twine breaking force	daN <sup>1)</sup>	98	See 9.2.
Minimum average knot breaking force	daN <sup>1)</sup>	54	See 9.3.

<sup>1)</sup> The SI unit of force is the newton. A force of 1 decanewton (daN) corresponds to that exerted by a mass of 1,02 kg.