



SLOVENSKI STANDARD
SIST EN 906:1999

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Poliolefinske poljedelske povezne vrvice

Polyolefin agricultural twines

Polyolefin-Erntegarne

Ficelles agricoles en polyoléfine

Ta slovenski standard je istoveten z: EN 906:1996

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English version

Polyolefin agricultural twines

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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.

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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 the Technical Committee CEN/TC 248 "Textiles and textile products", 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of an identical text or by endorsement, at the latest by October 1996, and conflicting national standards shall be withdrawn at the latest by October 1996.

This European standard is based on ISO 4167 "Polyolefin agricultural twines).

This European standard in its Annex A (informative) provides recommendations for the care and handling of baler twine.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This European Standard specifies the principle properties of polyolefin agricultural twines, the methods of test permitting their verification, and the form of delivery for the twines.

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 EN only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 20139:1992 Textiles - Standard atmosphere for conditioning and testing
(ISO 139:1993)

ISO 2 Textiles - Designation of the direction of twist in yarns and related products

3 Definitions

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For the purposes of this standard the following definitions apply :

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3.1 Agricultural twine

A 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

A definite quantity of twine produced under conditions which are presumed uniform.

3.3 Laboratory sample

The 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

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

4 Designation

A twine shall be designated by :

- the word "Agricultural Twine" ;
- the number of this European Standard ;
- the material from which the Agricultural Twine is made ;
- the nominal runnage in meters per kilo of the Agricultural Twine.

Example of designation :

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

Agricultural Twine EN 906 - 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 ultra- violet (UV) inhibitor system as well as colour pigment may be used.

NOTE: The colour pigment should not be toxic.

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).

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

7 Technical properties

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

Table 2 show indicative characteristics of some twines only ; others will have to be calculated in accordance with the formulae in clause 7 and 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:

$$R = \frac{31\,450}{n} + 8$$

where :

R 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 :

$$R' = 0,55 R$$

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where :

R' 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	Values of properties Example : Agricultural Twine EN 906 - PP - 350	Method of test
Linear density tex	2 857 ⁺²⁴⁹ -211	See 9.1
Runnage m/kg	350 ± 28	
Minimum twine breaking force daN 1)	98	See 9.2
Minimum average knot breaking force daN 1)	54	See 9.3

1) 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.

Table 2: Indicative characteristics of some twines

Designation/ end use	Linear density		Runnage of the twine		Minimum twine breaking force R daN	Minimum average knot breaking force R' daN
	Nominal Tex	Tolerance Tex	Nominal n m/kg	Tolerance m/kg		
Round bales	1 176	+ 103 - 87	850	±68	45	25
Round bales	1 724	+ 149 - 127	580	±46	62	34
Conventional bales	2 326	+ 199 - 171	430	±34	81	44
Conventional bales	2 857	+ 249 - 211	350	±28	98	54
Conventional bales	3 448	+ 297 - 253	290	±23	116	64
Big bales	6 667	+ 579 - 494	150	±12	218	120
Big bales	7 692	+ 641 - 549	130	±10	250	137

8 Sampling

8.1 Number of spools in a laboratory sample

Each 50 t or part thereof in a consignment of twine of the same code number shall represent for testing a batch to which the following sampling formula applies :

$$S = 0,25 \sqrt{N}$$

where :

S is the number of spools sampled rounded to the nearest integer ;

N is the number of spools in a batch of 50 t or less.