# SLOVENSKI STANDARD
# SIST EN ISO 252-1:1999

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**Naprave za kontinuirni transport - Trakovi traļ nih transporterjev s tekstilnim vlogkom - Sprijetost osnovnih sestavnih elementov - 1. del: Preskusne metode (ISO 252-1:1999)**

Textile conveyor belts - Adhesive strength between constitutive elements - Part 1: Methods of test (ISO 252-1:1999)

Textilfördergurte - Haftfestigkeit zwischen den Bestandteilen - Teil 1: Prüfverfahren (ISO 252-1:1999)



Courroies transporteuses a carcasse textile - Adhérence entre éléments constitutifs - Partie 1: Méthodes d'essai (ISO 252-1:1999)



**Ta slovenski standard je istoveten z:** **EN ISO 252-1:1999**

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|---|---|---|
| 53.040.20 | Deli za transporterje | Components for conveyors |

**SIST EN ISO 252-1:1999** **en**

EUROPEAN STANDARD

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# Textile conveyor belts - Adhesive strength between constitutive elements - Part 1: Methods of test (ISO 252-1:1999)

Courroies transporteuses à carcasse textile - Adhérence entre éléments constitutifs - Partie 1: Méthodes d'essai (ISO 252-1:1999)

Textilfördergurte - Haftfestigkeit zwischen den Bestandteilen - Teil 1: Prüfverfahren (ISO 252-1:1999)

This European Standard was approved by CEN on 16 April 1999.

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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## Foreword

The text of EN ISO 252-1:1999 has been prepared by Technical Committee CEN/TC 188 "Conveyor belts", the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 41 " Pulleys and belts(including veebelts)".

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 January 2000, and conflicting national standards shall be withdrawn at the latest by January 2000.

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

## 1 Scope

This Standard specifies two test methods , A and B, for determining the adhesion strength between plies, and between covers and carcase, of conveyor belts. Basic test conditions are in conformity with ISO 36.

It applies to all types of construction of conveyor belting with the exception of belts containing steel cord reinforcement, and textile-reinforced belts with a tensile strength less than 160 N/mm. It is not suitable or valid for light conveyor belts described in EN 873.

Note 1. Method A and Method B are alternative options but the mean adhesion force values calculated for Method A and Method B may be different. Also as both methods may not be equally suitable for all belt constructions , it is advisable that the advice of the belt manufacturer should be sought.

## 2 Normative references

This European Standard incorporates by dated and 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 European standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.



ISO 36 Rubber, vulcanized or thermoplastic - Determination of adhesion to textile fabric

ISO 6133 Rubber and plastics - Analysis of multi-peak traces obtained in determinations of tear strength and adhesion strength

## 3 Principle

The mean force required to strip the covers from the carcase, and also each ply from the next, is determined using a constant rate of traverse machine.

## 4 Apparatus

Suitable power-driven tensile testing machine, complying with the requirements of ISO 36.

## 5 Test pieces

### 5.1 Time between manufacture and test

The test pieces shall be cut at least 24h after the belt is manufactured.

### 5.2 Shape and dimensions

Each test piece shall consist of a strip of belting of rectangular cross-section with clean-cut edges, (25 ± 0,5) mm wide, and 200 mm minimum length so as to permit a length of at least 100 mm to be stripped. If necessary and possible, the thickness shall be reduced to a suitable value which will ensure that during the test the line of separation remains as near as possible to the plane through the axes of the components of the test piece held between the grips (see figure 1).

The minimum thickness shall be such that the weakest component can transmit the necessary force for separation without breaking.

### 5.3 Number

For both methods A and B two test pieces in the longitudinal direction are required.



Note 2. The test can also be conducted with two transverse test pieces.



### 5.4 Selection of test pieces from the sample

The test pieces shall be taken not less than 100 mm from the edges of the available belt sample and from places as widely spaced as possible.

## 6 Conditioning

The tests shall start not less than 24h after manufacturing.This time includes 8h for conditioning at one of the temperature specified below.

(23 ± 2)°C or (20± 2)°C for temperate temperature control only, or

(27 ± 2)°C for tropical temperature control only

The tests shall be conducted at the same temperature as used for conditioning. A certain humidity for conditioning and testing is not required.

The temperature at which the test pieces were conditioned and tested shall be reported in the test report.

## 7 Procedure

### 7.1 Method A (see figure 2)

At one end of the longitudinal test piece, separate the face cover from the first ply for a suitable distance appropriate to the test grips to be used. Fix the separated ends in the grips of the tensile testing machine and make an autographic record of the force required to strip a further 100 mm with a rate of traverse of the driven jaw of (100 ± 10) mm/min. The test piece shall be unsupported.

Repeat this procedure using the same test piece for each consecutive ply up to the middle of the test piece.

Carry out a similar series of tests on a second longitudinal test piece but commencing with the back cover.

If the test is to be made on transverse test pieces the test is conducted in the same manner.

### 7.2 Method B (see figure 3)



At one end of the longitudinal test piece, separate the face cover from the first ply for a suitable distance appropriate to the test grips to be used. Fix the separated ends in the grips of the tensile testing machine and make an autographic record of the force required to strip a further 100 mm with a rate of traverse of the driven jaw of (100 ± 10) mm/min. The test piece shall be unsupported.



Repeat this procedure using the same test piece, stripping consecutively two unseparated plies from the remainder of the test piece.

Carry out a similar series of tests on a second longitudinal test piece but commencing by separating the unseparated face cover and first ply, from the second ply.

If the test is to be made on transverse test pieces the test is conducted in the same manner.

NOTE 3 - Any separation occurring outside the plane of contact between the two components, for example inside one of the components (such as a cover) subjected to the test, is considered as a rupture of the material which constitutes the component. Such a separation should be noted but should not be considered as representative of the adhesion strength.

## 8 Expression of results

### 8.1 Examination of test traces

Examination and analysis of the multi-peak adhesion strength test traces shall be in accordance with ISO 6133. The median peak force is defined as the mean adhesion force.

Calculate the average adhesion as the quotient of the mean adhesion force, in newtons, divided by the nominal width, in millimetres, of the test piece to the nearest 0,1 N/mm.

### 8.2 Calculation of mean values

#### 8.2.1 Longitudinal samples

Calculate the mean value of

a) all the tests made on the two test pieces cut longitudinally in which the cover is stripped from the carcase;

b) all the tests made on the two test pieces cut longitudinally in which ply is stripped from ply.



#### 8.2.2 Transverse samples

Make a similar calculation for the two test pieces cut transversely.



#### 8.2.3 Mean value of results

Calculate the mean value of all results longitudinally and transversely for
a) all tests in which the cover is stripped from the carcase;

b) all tests in which ply is stripped from ply.