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Textile conveyor belts — Determination of the net length of an endless (spliced) conveyor belt

Courroies transporteuses à carcasse textile — Méthode de mesurage de la longueur nette d'une courroie transporteuse sans fin (jonctionnée)

Reference number
ISO 16851:2004(E)

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
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Foreword

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ISO 16851 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts*), Subcommittee SC 3, *Conveyor belts*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read “...this European Standard...” to mean “...this International Standard...”.

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Foreword

This document (EN ISO 16851:2004) 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of an identical text or by endorsement, at the latest by June 2005, and conflicting national standards shall be withdrawn at the latest by June 2005.

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.

1 Scope

This European Standard specifies a method for determining the net length of an endless (spliced) conveyor belt.

It applies to all types of construction of conveyor belting with the exception of belts containing steel cord reinforcement. It is not suitable or valid for light conveyor belts described in EN 873[1].

2 Apparatus

Steel tape measure, graduated in millimetres.

For measurement to be accurate it is essential that the tape is calibrated or subject to inspection.

3 Procedure

Lay out the endless conveyor belt so that it is flat and free from tension.

Using the flat part of the belt only, as indicated in Figure 1, place a mark on one edge of the inside surface at the point at which measurements are to begin (i.e. point A).

Mark point B further along the flat part of the belt as follows:

a) for belts up to 30 m in circumferential length, the individual measurements shall be between one-quarter and one-third of the nominal circumferential length, except the final individual measurement, which may be less than one-quarter of the nominal circumferential length;

b) for belts greater than 30 m in circumferential length, the individual measurements shall be between 7,5 m long and not more than one-third of the nominal circumferential length, except the final individual measurement, which may be less than 7,5 m long.

Measure and record the distance AB, between points A and B.

Rotate the belt and make consecutive measurements along the inside surface of the flat part of the belt only. Designate the individual measurements as AB, BC, CD etc., continuing until the last measurement *x*A can be taken.

NOTE In the event of a dispute, measurements should be taken at one of the standard atmospheres given in ISO 18573 [1], as agreed between supplier and customer.

[1] EN 873 will be published as ISO 21183-1.

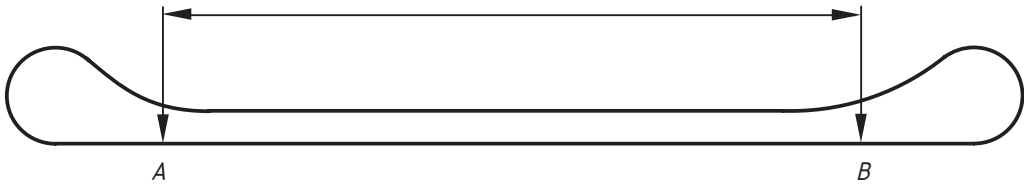

Figure 1 — Measurement of the length of an endless conveyor belt

4 Calculation and expression of results

Calculate the net endless length, $l_{e,}$ of the conveyor belt as follows:

$$l_e = \left[\overline{AB} + \overline{BC} + \overline{CD} + ... + \overline{xA}\right] - \pi d$$

where

d is the thickness of the belt

By taking measurements on the flat part of the belt only, the length along the neutral axis is obtained. To allow for the compression of the inside surface, it is necessary to deduct the amount πd in order to obtain the true inside length.

Express the results in millimetres.

NOTE Tolerances on lengths of endless conveyor belts are given in EN ISO 14890 [2].

5 Test report

The test report shall include the following:

a) reference to this European Standard, EN ISO 16851;

b) identification of the belt tested;

c) net length of the conveyor belt in millimetres;

d) date on which the belt was measured.

Bibliography

[1] ISO 18573, *Conveyor belts — Test atmospheres and conditioning periods*

[2] EN ISO 14890, *Conveyor belts — Specification for rubber or plastics covered conveyor belts of textile construction for general use (ISO 14890:2003)*

[3] EN 873, *Light conveyor belts — Principal characteristics and applications*

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