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Conveyor belts — Method for the determination of the tear propagation resistance of textile conveyor belts

Courroies transporteuses — Méthode de détermination de la résistance à la propagation d'une déchirure dans les courroies transporteuses à carcasse textile

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Contents

Page

Foreword

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This document was prepared by Technical Committee ISO/TC41 *Pulleys and belts (including veebelts)*, Subcommittee SC 3, *Conveyor belts,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 188, *Conveyor belts*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fifth edition cancels and replaces the fourth edition (ISO 505:2017), which has been technically revised.

The main changes are as follows:

— inclusion of an explanation on sample length and cutting length (see 6.2);

— removal of atmosphere A, only retaining atmosphere B, C, D and E which are specified in ISO 18573 (see 7.1);

— revision of Figure 1,2,3 and 4.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Conveyor belts — Method for the determination of the tear propagation resistance of textile conveyor belts

1 Scope

This document specifies a method of test for the measurement of the propagation resistance of an initial tear in textile conveyor belts, either in full thickness or of the carcass only.

This document is applicable to textile belts in installations where there is a risk of longitudinal tearing.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 6133, *Rubber and plastics — Analysis of multi-peak traces obtained in determinations of tear strength and adhesion strength*

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

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Principle

The test consists in measuring, by means of tensile testing at a given speed, the force necessary to propagate an initial tear made in a test piece.

5 Apparatus

The apparatus consists of a dynamometric tensile testing machine with the following characteristics:

a) the machine shall be chosen so that the forces to be measured come within the upper 90 % range of its full rated capacity;

b) the speed of separation of the jaws shall be capable of being adjusted to (50 ± 10) mm/min;

c) the free distance between the jaws shall be capable of being adjusted to at least 300 mm.

The machine shall be provided with a device for the graphical recording of the force necessary to continue tearing the test piece.

6 Test pieces

6.1 Method of sampling

Test pieces shall be taken from the sample in the longitudinal direction of the belt and at a minimum distance of 50 mm from the edges of the belt.

6.2 Shape and dimensions

Shape: rectangular.

Length: 300 mm.

Width: (100 ± 1) mm.

Thickness: Full belt thickness or without covers.

If it is found that weft threads are pulled out of the test piece instead of breaking, the width of the test piece shall be increased to 300 mm.

NOTE Sample length and cutting length can be appropriately extended based on testing conditions.

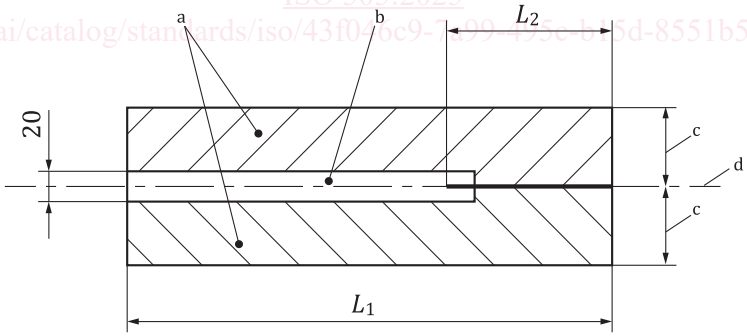
6.3 Number

Two test pieces shall be used: one in sense A and the other in sense B (see Figure 4).

6.4 Preparation

Where the test is to be conducted without covers, the covers of the test pieces shall be removed by stripping or by buffing.

If there is a breaker ply, strip the corresponding covers without cutting the breaker ply over a width of 20 mm only, i.e. 10 mm on each side of the longitudinal axis of the test piece with the exception of the zone held in the jaws of the machine (see Figure 1).



Key

L1 300 mm or appropriately extended 300 mm based on testing conditions

L2 100 mm or appropriately extended 100 mm based on testing conditions

a With covers.

b Covers removed.

c 50 or 150 (see 6.2).

d Cut line.

Figure 1 — Test pieces with breaker