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Steel cord conveyor belts — Methods for the determination of total thickness and cover thickness

Courroies transporteuses à câbles d'acier — Méthodes de détermination de l'épaisseur totale et de l'épaisseur des revêtements

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts)*, Subcommittee SC 3, *Conveyor belts.*

This sixth edition cancels and replaces the fifth edition (ISO 7590:2009), which has been technically revised. The main change compared to the previous edition is as follows:

— Figure 4 has been corrected.

Steel cord conveyor belts — Methods for the determination of total thickness and cover thickness

1 Scope

This document specifies three methods for the measurement of total belt thickness and the thickness of covers of steel cord conveyor belts.

Methods A1 and A2 (micrometer methods) can be used for all steel cord conveyor belts for the measurement of both total belt thickness and cover thickness.

Method B (optical method) is intended for the measurement of cover thickness only. It is not suitable if there is a textile or metal weft, nor if the ends of the steel cords become twisted when cut.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

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

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

3.1
breaker
transverse reinforcement in the conveyor belt, typically of a textile material, inserted both above and below or either above or below the steel cords at a distance of at least 1 mm and considered to be part of the cover

Note 1 to entry: It is used to protect the longitudinal cords from impact or trapped material damage.

3.2
weft
transverse component of a protective reinforcement of either steel or textile cords, typically inserted both above and below, or either above or below, the steel cords at a distance of less than 1 mm and considered to be part of the belt carcass

4 Principle

The total thickness is measured using a micrometer at a number of specified points depending on belt width.

The cover thicknesses are measured either:

a) by removing the covers, taking further measurements at the same specified points and calculating each of the cover thicknesses by subtraction; or

b) by direct measurement using an optical measuring instrument.

5 Apparatus

5.1 Dial gauge micrometer for methods A1 and A2

The instrument shall be graduated every 0,1 mm with flat feet and a circular foot 10 mm in diameter that exerts a pressure of (22 ± 5) kPa on the test specimen.

5.2 Optical measuring instrument for method B

The instrument shall comprise a hand-held magnifying glass with a scale divided in 0,1 mm steps. The magnification shall be at least 8 times.

6 Procedure

6.1 General

If the adhesion strength between cover and core layer is being measured in accordance with ISO 8094, the same test pieces may be used for the determination of cover thickness described in method A1.

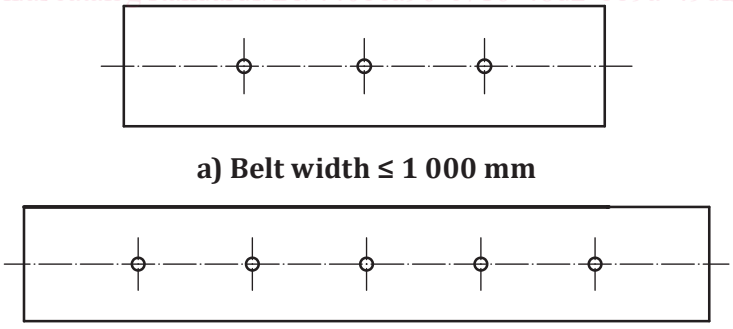
If the position of the steel cord is being measured in accordance with EN 13827, the same test piece may be used for the determination of cover thickness described in method A2.

If the use of methods A1 and A2 is impractical, the visible belt end or the end of a laboratory sample of the belt may be used for the determination of cover thickness described in method B.

6.2 Measurement points

If the belt width is less than or equal to 1 000 mm, measure the thickness at three points spaced equidistantly over the belt width [see Figure 1 a)].

If the belt width is greater than 1 000 mm, measure the thickness at five points spaced equidistantly over the belt width [see Figure 1 b)].



a) Belt width ≤ 1 000 mm

b) Belt width > 1 000 mm

Figure 1 — Location of measurement points

6.3 Test pieces and test specimens

6.3.1 General

Cut a rectangular test piece across the full belt width, at 90° to the belt edge, having dimensions as specified in 6.3.2 to 6.3.4, as appropriate.