

INTERNATIONAL STANDARD

ISO
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Third edition
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Steel cord conveyor belts — Cover thickness measurement

*Courroies transporteuses à câbles d'acier — Mesurage de l'épaisseur
des revêtements*

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Reference number
ISO 7590:1990(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 7590 was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts)*.

This third edition cancels and replaces the second edition (ISO 7590:1988), of which it constitutes a technical revision. It incorporates a second method of taking a sample.

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Steel cord conveyor belts — Cover thickness measurement

1 Scope

This International Standard specifies a method of measuring cover thickness of steel cord conveyor belts.

2 Principle

Measurement of the thickness of a specimen at a number of points specified according to the belt width before and after each of the covers has been removed. Calculation of cover thickness by subtraction.

3 Definitions

3.1 breaker: Reinforcement included in the cover layer.

3.2 weft: Transverse layer or layers included to reinforce the carcass of the belt and not regarded as part of the cover layer.

4 Equipment

Dial gauge micrometer, graduated every 0,1 mm, with flat feet, a circular foot of 10 mm in diameter and exerting a pressure of 22 kPa \pm 5 kPa on the sample.

5 Procedure

5.1 Specimens

5.1.1 Method 1

Take a specimen, across the full belt width, with the following dimensions:

- a) width: approximately 50 mm
- b) length: equal to total belt width

5.1.2 Method 2

At each of the points defined in 5.2, take a specimen, across the full belt width, with the following dimensions:

- a) width: equal to the width comprising two cords (see figure 1)
- b) length: approximately 150 mm

Carry out the measurements in the order of sub-clauses 5.3, 5.4 and 5.5. For the measurements, prepare the specimens by cutting off the top and bottom covers as completely as possible from the steel cord with a knife (as shown in figure 2) or using any other suitable method.

5.2 Measurement points

Measure the thickness at the following number of points (see figure 3):

- a) belt width, $l \leq 1\ 000$ mm : 3 points
- b) belt width, $l > 1\ 000$ mm : 5 points

The measurement points shall be spaced equidistantly over the belt width.

5.3 Measurement of total thickness

Measure the total thickness d of the specimen at each of the points specified according to the width of the belt (see figure 3).

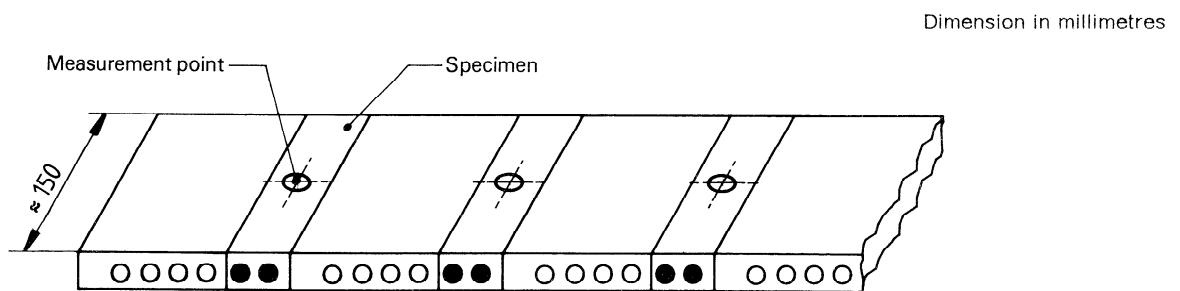


Figure 1 — Specimens taken at measurement points cut from full width belt sample

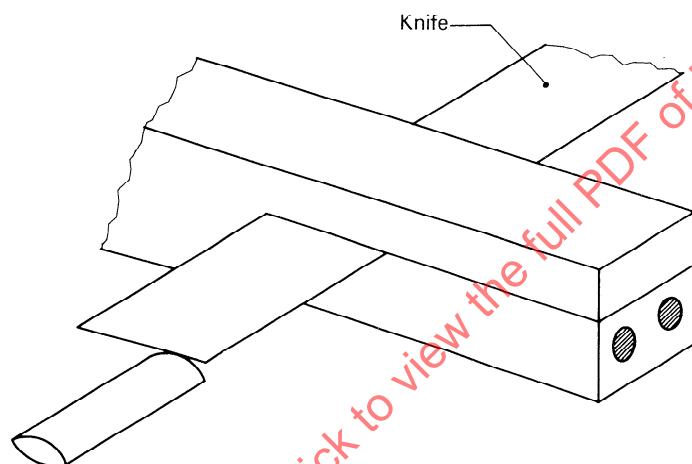


Figure 2 — Removing rubber cover using a knife

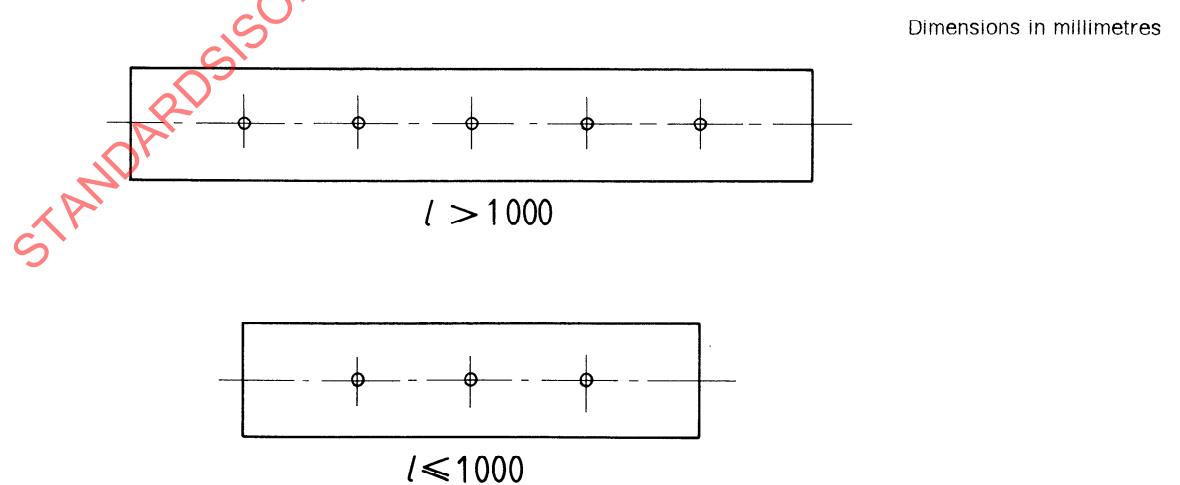


Figure 3 — Location of measurement points

5.4 Measurement of top cover thickness

Cut a section of the top cover over 20 mm of the width and over the entire length of the specimen [see figure 4 a) and b)]. Measure thickness d_1 at the same points as above. Measurements shall be taken directly above a cord. Ensure that the micrometer foot is in contact with the surface of the cord [see figure 4 a)] or the surface of the cord layer [see figure 4 b)].

The thickness of the top cover e_1 , at each measurement point, is expressed in the following formula:

$$e_1 = d - d_1$$

5.5 Measurement of bottom cover thickness

Cut the bottom cover in accordance with the instructions in 5.4.

Measure thickness d_2 as indicated in 5.4, checking that the measurement points are located over the cords.

The thickness of the bottom cover e_2 , at each measurement point, is expressed in the following formula:

$$e_2 = d_1 - d_2$$

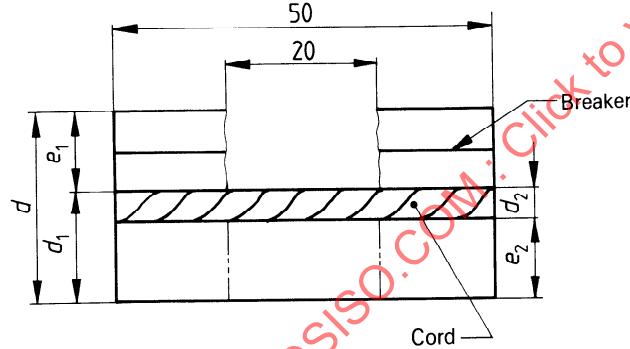
6 Expression of results

Calculate the arithmetical mean of three (or five) thicknesses e_1 and e_2 determined as indicated in 5.4 and 5.5. Express the results in millimetres.

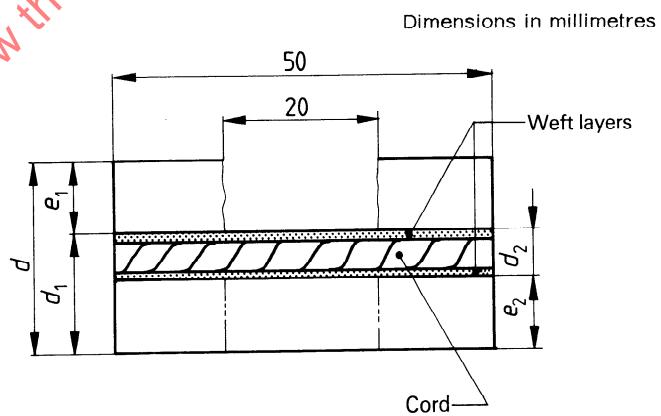
7 Test report

The test report shall contain the following information:

- reference to this International Standard;
- identification of the belt tested and the samples (method 1 or 2);
- the number of measurement points;
- the results expressed in accordance with clause 6;
- the date of the test.



a) Sample without weft, with or without breaker



b) Sample with weft

Figure 4 — Cross-sections

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