

INTERNATIONAL STANDARD

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Steel cord conveyor belts — Cover thickness measurement

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



Reference number
ISO 7590:1990(E)

Foreword

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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 $22 \text{ kPa} \pm 5 \text{ kPa}$ 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, $l \leq 1\,000 \text{ mm}$: 3 points
- b) belt width, $l > 1\,000 \text{ mm}$: 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).

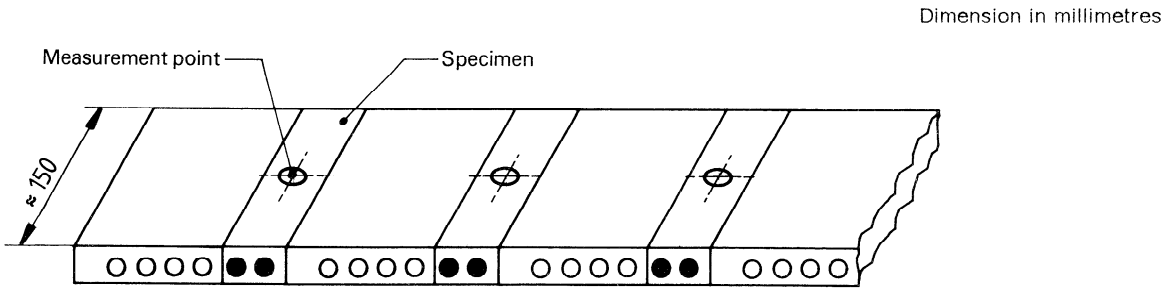


Figure 1 — Specimens taken at measurement points cut from full width belt sample

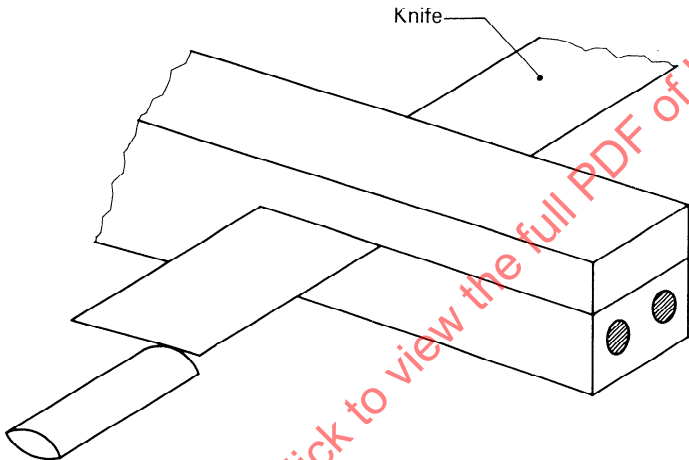


Figure 2 — Removing rubber cover using a knife

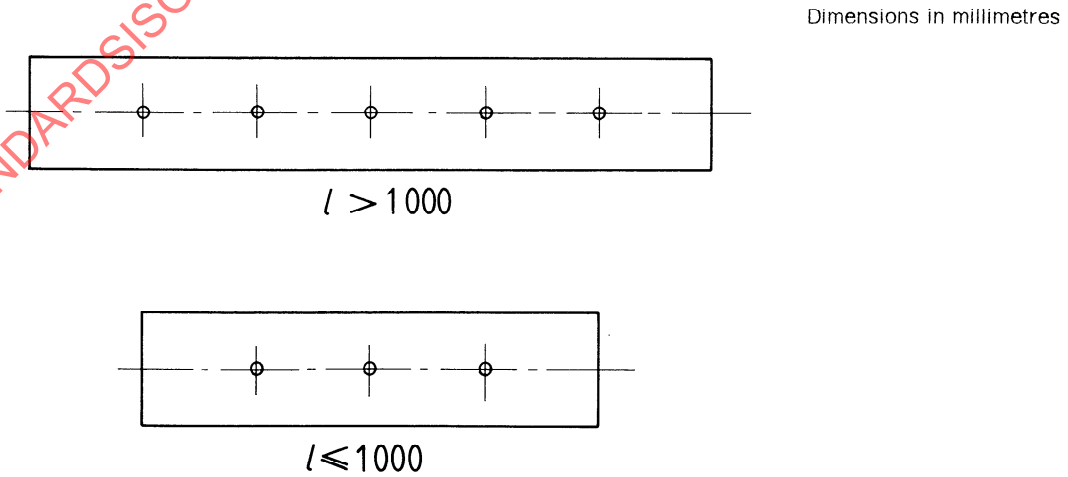


Figure 3 — Location of measurement points

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.

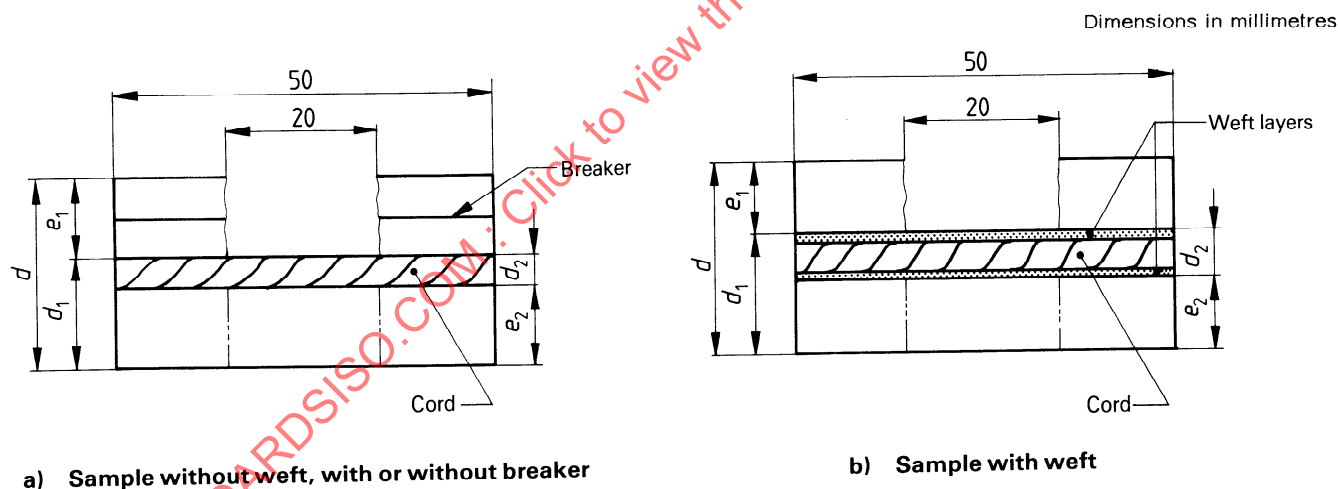


Figure 4 — Cross-sections

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