

INTERNATIONAL STANDARD

ISO
583

Second edition
1990-11-15

Conveyor belts with a textile carcass — Tolerances on total thickness and thickness of covers — Direct measurement method

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*Courroies transporteuses à carcasse textile — Tolérances sur l'épaisseur
totale et l'épaisseur des revêtements — Méthode de mesurage direct*

ISO 583:1990

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Reference number
ISO 583:1990(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 583 was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts)*.

This second edition cancels and replaces the first edition (ISO 583:1975), of which it constitutes a technical revision.

Annex A of this International Standard is for information only.

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Conveyor belts with a textile carcass — Tolerances on total thickness and thickness of covers — Direct measurement method

1 Scope

This International Standard specifies

- a) the maximum difference between the total thickness measured at any two points of the area of a conveyor belt, and the appropriate method of measurement;
- b) the permissible deviations on the thickness of each cover and the appropriate method of measurement. The latter applies only to belts with covers at least 1 mm thick, which must always be completely removed.

NOTE 1 Alternative measurement methods other than the one specified in this International Standard are under study (for example an optical method).

However, neither the total thickness of the belt nor the thickness of the covers are standardized. They are to be fixed by agreement between purchaser and seller. The deviations mentioned in b) apply to the thickness of the covers specified in this way.

This International Standard applies only to belts with textile or aramide carcass, but not to belts with a metal carcass, which form the subject of ISO 7590.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4648:—¹⁾, *Rubber, vulcanized or thermoplastic — Determination of dimensions of test pieces and products for test purposes.*

3 Required characteristics

The required characteristics are given in table 1.

1) To be published. (Revision of ISO 4648:1978)

Table 1

Designation	Required characteristics	Method of measurement
Maximum difference between the values of the total thickness measured at any two points of the area of the belt	1 mm if the mean of two measurements does not exceed 10 mm 10 % of the mean if it exceeds 10 mm	4.1
Maximum permissible deviation of the specified thickness of each cover	plus: no limit	4.2
	minus: 0,2 mm if the specified thickness is equal to or less than 4 mm 5 % of the specified thickness if it is greater than 4 mm	

4 Measurement methods

4.1 Total thickness

Apply to the two points chosen a measuring instrument with flat feet and graduated at least every 0,1 mm.

- a) belt width, $l \leq 650$ mm: 3 points
- b) belt width, $650 \text{ mm} < l \leq 1200$ mm: 5 points
- c) belt width, $l > 1200$ mm: 8 points

The measurement points shall be spaced equidistantly along the long axis of the specimen (i.e. the belt width) (see figure 1).

4.2 Thickness of covers

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4.2.1 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.

4.2.3.3 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 1).

4.2.3.4 Measurement of cover thickness

Remove one cover completely, then measure the thickness d_1 of the specimen at the same points.

Remove the other cover completely, then measure the thickness d_2 of the specimen at the same points.

NOTE 2 Any protective fabric (embedded in the covers) which does not participate in the tension exerted on the belt should be considered as forming part of the covers and should therefore be removed with them.

4.2.2 Apparatus

4.2.2.1 Dial gauge micrometer, graduated at least every 0,1 mm, with flat feet, a circular foot 10 mm in diameter and exerting a pressure of $22 \text{ kPa} \pm 5 \text{ kPa}$ on the test piece or of $10 \text{ kPa} \pm 2 \text{ kPa}$, according to the material.

4.2.3 Procedure

4.2.3.1 Sample

Take from the total thickness of the textile carcass belt, including the covers, a rectangular specimen with the following dimensions.

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

4.2.3.2 Measurement points

Carry out the measurements in accordance with method A of ISO 4648 with the fixed pressure specified in 4.2.2, at the following number of points:

4.3 Expression of results

The calculated thicknesses e_1 and e_2 of the covers at each of the measurement points are given by the following formulae:

$$e_1 = d - d_1$$

where e_1 is the thickness of the top cover,

and

$$e_2 = d_1 - d_2$$

where e_2 is the thickness of the bottom cover.

Calculate the arithmetical mean of the three, five or eight thicknesses e_1 and e_2 determined as indicated

in 4.2.3.3 and 4.2.3.4. Express the total thickness and cover thickness, in millimetres, to the nearest 0,1 mm.

5 Test report

The test report shall contain the following information:

a) a reference to this International Standard;

- b) the identification of the textile carcass belt tested;
- c) the number of measurement points and the test pressure value;
- d) the results expressed in accordance with 4.3;
- e) the date of the test.

Dimensions in millimetres

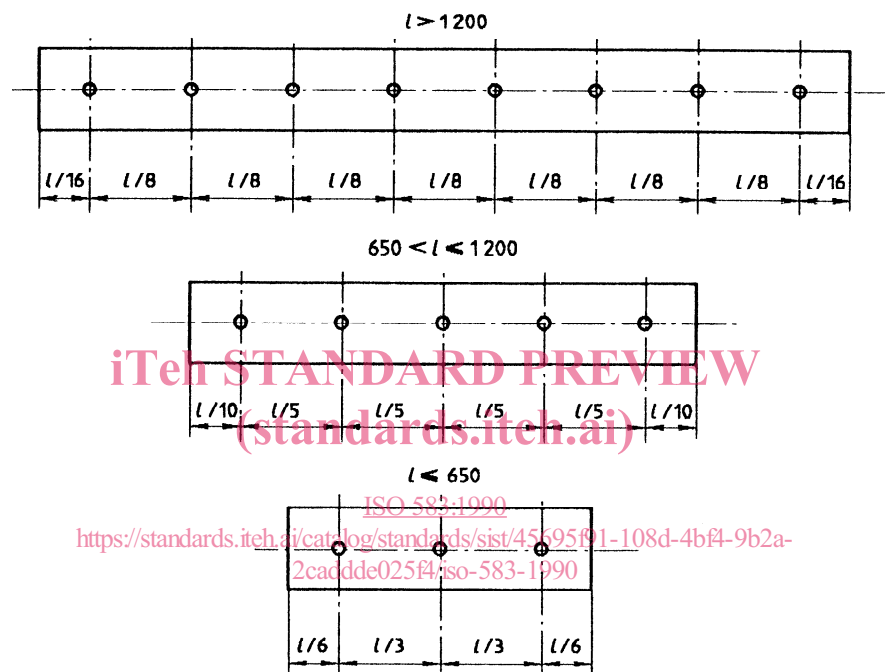


Figure 1 — Distribution of measurement points

Annex A
(informative)

Bibliography

[1] ISO 7590:1990, *Steel cord conveyor belts — Cover thickness measurement*.

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