
**Steel cord conveyor belts —
Adhesion strength test of the cover
to the core layer**

*Courroies transporteuses à câbles d'acier — Essai d'adhérence du
revêtement à la couche de câbles*

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 8094 was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts)*, Subcommittee SC 3, *Conveyor belts*.

This second edition cancels and replaces the first edition (ISO 8094:1984), of which it constitutes a minor revision.

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Steel cord conveyor belts — Adhesion strength test of the cover to the core layer

1 Scope

This International Standard specifies a test method for determining the adhesion strength of the cover to the core layer.

It applies exclusively to steel cord conveyor belts.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 36, *Rubber, vulcanized or thermoplastic — Determination of adhesion to textile fabrics*

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 Test principle

Measurement of the force required to separate the covers from the core layer by stripping.

4 Apparatus

4.1 **Tensile test machine with jaws**, in accordance with the equipment described in ISO 36.

5 Specimens

Take six specimens with the following dimensions:

- a) belts without weft, with or without textile reinforcement:
 - 1) length (in the longitudinal direction of the belt): 150 mm min.;
 - 2) width: 25 mm min. and containing at least two steel cords;
 - 3) thickness: full thickness of the belt;
- b) belts with metallic weft:
 - 1) length (in the direction of the cord layer): 150 mm min.;
 - 2) width: 25 mm ± 0,5 mm;
 - 3) thickness: full thickness of the belt.

Cut the specimens parallel to the axis of the belt and at least 50 mm from the belt edge.

Using a knife, cut the cover rubber on either side of the specimen along the upper and lower edges of the cords along a length sufficient for a safe grip in the jaws of the test machine.

6 Procedure

6.1 Carry out the test in accordance with ISO 36, at least five days after manufacture of the belt.

Unless otherwise specified, and so indicated in the test report, carry out the test at $23\text{ °C} \pm 2\text{ °C}$ and $50\% \pm 5\%$ relative humidity in accordance with ISO 18573, Atmosphere B.

6.2 From the first three specimens, fix the top cover in one jaw of the test machine and the core layer including the cords (without the bottom cover) in the other jaw.

6.3 Start the test machine, with the gap widening speed of the jaws maintained constant at $100\text{ mm/min} \pm 10\text{ mm/min}$.

6.4 Record a graphical plot of the force.

6.5 From the remaining three specimens, fix the bottom cover in one jaw and the core layer, including the cords in the other jaw, and repeat the test in accordance with 6.3 and 6.4.

6.6 Carry out three tests.

6.7 If the adhesion strength of the cover to the core layer is greater than the tear strength of the core layer, the maximum force obtained is recorded together with the mode of failure.

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7 Expression of results <https://standards.iteh.ai/catalog/standards/sist/846f36cf-e6ad-4c48-bfea-c5515ab8f72b/iso-8094-2013>

7.1 From the recordings of the separating force variations, determine the median force \tilde{F} in accordance with ISO 6133.

7.2 For each test, the adhesion strength T of the cover to the core layer, in newtons per millimetre, is calculated by Formula (1):

$$T = \frac{\tilde{F}}{b} \quad (1)$$

where b is the width of the specimen, expressed in millimetres.

7.3 Calculate separately the mean for the top cover and the bottom cover by Formula (2):

$$\bar{T} = \frac{T_1 + T_2 + T_3}{3} \quad (2)$$

7.4 Round off single values T and mean values \bar{T} to 0,1 N/mm.

8 Test report

The test report shall include the following information:

- a) a reference to this International Standard, i.e. ISO 8094;
- b) the identification of the belt tested;

- c) the width of the specimens;
- d) the adhesion strengths of the top cover and the bottom cover, respectively, to the core layer in accordance with [Clause 7](#);
- e) any operating details not specified in this International Standard or considered optional, together with any events which are likely to have influenced the results.

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