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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 505

TEAR PROPAGATION RESISTANCE OF THE CARCASS OF CONVEYOR BELTS

(METHOD OF TEST)

1st EDITION
October 1966

For each individual country the only valid standard is the national standard of that country.

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BRIEF HISTORY

The ISO Recommendation R 505, *Tear Propagation Resistance of the Carcass of Conveyor Belts (Method of Test)*, was drawn up by Technical Committee ISO/TC 41, *Pulleys and Belts (including Vee-belts)*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question by the Technical Committee began in 1960 and led, in 1963, to the adoption of a Draft ISO Recommendation.

In December 1964, this Draft ISO Recommendation (No. 768) was circulated to all the ISO Member Bodies for enquiry. It was approved by the following Member Bodies:

Argentina	Greece	Republic of South Africa
Australia	India	Spain
Austria	Israel	Sweden
Belgium	Italy	Switzerland
Chile	Japan	Turkey
Czechoslovakia	Korea, Rep. of	U.A.R.
Denmark	Netherlands	United Kingdom
Finland	New Zealand	U.S.A.
France	Pakistan	U.S.S.R.
Germany	Portugal	Yugoslavia

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council which decided, in October 1966, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 505 October 1966

TEAR PROPAGATION RESISTANCE OF THE CARCASS OF CONVEYOR BELTS

(METHOD OF TEST)

1. SCOPE

The object of this ISO Recommendation is to describe a method of test for the measurement of the propagation resistance of an initial tear in the carcass of conveyor belts.

This test is intended for application to belts used in mines and in installations where there is a risk of longitudinal tearing.

2. PRINCIPLE OF METHOD

The test consists in measuring, by means of tensile testing at a given speed, the force necessary to propagate an initial tear made in a test piece from which the covers have been removed.

3. APPARATUS

The apparatus consists of *a dynamometric tensile testing machine* with the following essential characteristics:

(*a*) the machine should be chosen so that the forces to be measured come within the upper 90 per cent range of its full rated capacity;
(*b*) the speed of separation of the jaws should be capable of being adjusted to 100 ± 10 mm (4 ± 0.4 in) per minute;
(*c*) the free distance between the jaws should be capable of being adjusted to at least 300 mm (12 in).

The machine should be provided with a *device for the graphical recording* of the force necessary to continue tearing the test piece.

4. TEST PIECES

4.1 Shape and dimensions

Shape:	rectangular.
Length:	300 mm (12 in).
Width:	100 ± 1 mm (4 ± 0.04 in).
Thickness:	belt thickness, without covers.

4.2 Number of test pieces

Two test pieces should be used: one in sense A and one in sense B (see Fig. 4, page 7)

4.3 Method of sampling

Test pieces should be taken from the sample in the longitudinal direction of the belt and at a minimum distance of 10 mm (0.4 in) from the edges of the belt.

4.4 Preparation

The covers of the test pieces are removed by stripping or by buffing.

If there is a breaker ply, the corresponding covers should be stripped without cutting the breaker ply over a width of 20 mm (0.8 in) only, i.e. 10 mm (0.4 in) on each side of the longitudinal axis of the test piece with the exception of the zone held in the jaws of the machine (see Fig. 1).

Cut the test pieces from the middle of one of their ends over a length of about 100 mm (4 in) parallel to the length (see Fig. 2).

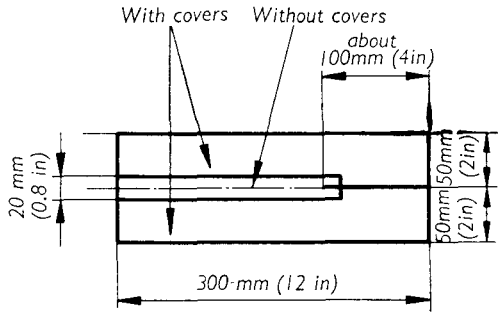

FIG. 1. — **Test piece with breaker**

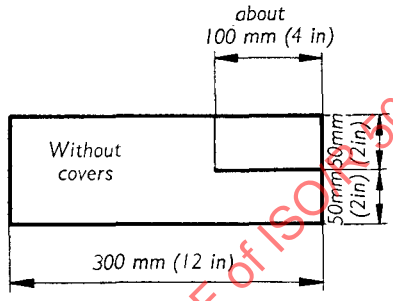

FIG. 2. — **Test piece without breaker**

If necessary, the width of the test piece (cut edge) may be adjusted to the gripping width of the jaws by tapering the edges symmetrically on a length at most the same as that of the cut, as indicated in Figure 3, with the width at the end of the cut part as great as the width of the jaws permits.

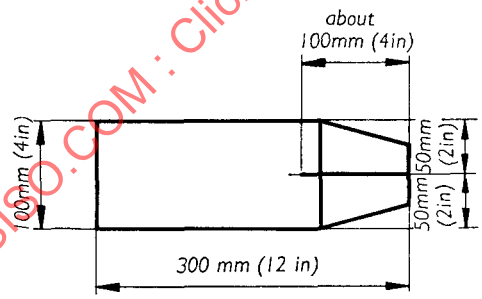

FIG. 3. — **Tapered test piece**

5. METHOD OF TEST

5.1 Conditioning of test pieces

The test should be performed on test pieces taken at least 5 days after manufacture.

The test pieces should be conditioned for 3 days at a temperature of 20 ± 2 °C and a relative humidity of 65 ± 5 per cent.

In the event of dispute, the conditioning period should be increased to at least 14 days (with the same temperature and humidity conditions). The exact value of this period may be specified by agreement between the manufacturer and the user.