

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 703

TROUGHABILITY OF CONVEYOR BELTS

(Characteristic and method of test)

1st EDITION

March 1968

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Printed in Switzerland

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BRIEF HISTORY

The ISO Recommendation R 703, *Troughability of conveyor belts (Characteristic and 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 1964, to the adoption of a Draft ISO Recommendation.

In September 1965, this Draft ISO Recommendation (No. 860) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	France	Sweden
Austria	Germany	Switzerland
Belgium	India	Turkey
Brazil	Italy	United Kingdom
Chile	Japan	U.A.R.
Czechoslovakia	South Africa,	Yugoslavia
Denmark	Rep. of	
Finland	Spain	

Two Member Bodies opposed the approval of the Draft :

Ireland
Netherlands

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council which decided, in March 1968, to accept it as an ISO RECOMMENDATION.

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TROUGHABILITY OF CONVEYOR BELTS

(Characteristic and method of test)

FORWARD

A large number of conveyor belts work in the form of a trough. If a belt is too stiff in the transverse direction, when empty it does not rest on the central idler roller. Its balance is then unstable and it is subject to lateral travel which may eventually cause its destruction.

It is possible to make a section of the belt take on the shape of a trough under its own weight, by suspending the section by its edges. This indicates what happens in use when the belt is empty.

1. SCOPE

This ISO Recommendation specifies the required characteristic of the troughability of conveyor belts and the corresponding method of test.

2. REQUIRED CHARACTERISTIC

The minimum value of the ratio of the deflection F taken by the test piece during the test, to the flat width L of the belt, should be equal to 0.05.

NOTE. — As an indication, in the case of a belt supported by three identical idler rollers, the required relationship between the ratio $\frac{F}{L}$ and the angle of inclination of the side idler rollers is given by the following Table :

TABLE

Angle of inclination of the side idler rollers	Minimum values of the ratio $\frac{\text{deflection } F}{\text{width } L}$
25°	0.06
30°	0.07
35°	0.09
40°	0.12
45°	0.17

3. PRINCIPLE OF METHOD

A test piece consisting of a transverse full width section of belt is suspended at both ends with the carrying face uppermost so that the upper edges of these ends are in the same horizontal plane.

The suspending forces act vertically and the deflection of the test piece under gravity is unaffected by any other external force. The troughability is determined by measuring the maximum deflection of the test piece under its own weight and is expressed as the ratio of the deflection to the flat length of the test piece (i.e. the width of the belt).

4. APPARATUS

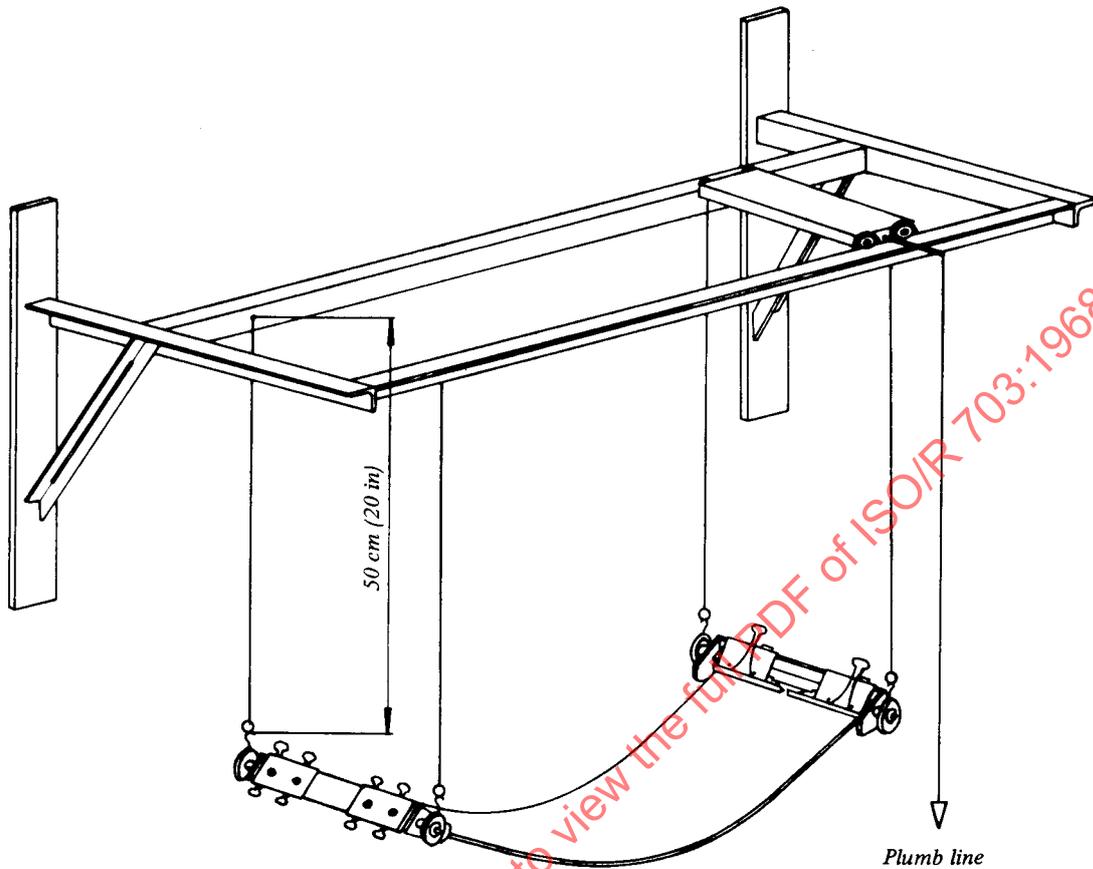


FIG. 1 - Apparatus for measuring deflection of test piece
(Details given only as an indication)

4.1 Clamps

Two clamps hold the ends of the test piece; each clamp should

- (a) hold the test piece across a width of at least 140 mm (5.6 in) and to a depth into the clamp of not more than 15 mm (0.6 in);
- (b) prevent curvature across the end of the test piece;
- (c) be balanced about a horizontal axis of rotation;
- (d) permit suspension of the test piece so that the horizontal axis of rotation of each clamp corresponds with a line across the respective end of the test piece midway between the top and bottom surfaces.