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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1746

RUBBER HOSES

BENDING TEST

1st EDITION

November 1970

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

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 1746, *Rubber hoses – Bending test*, was drawn up by Technical Committee ISO/TC 45, *Rubber*, the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1746 which was circulated to all the ISO Member Bodies for enquiry in December 1968. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	India	South Africa, Rep. of
Austria	Iran	Spain
Belgium	Israel	Switzerland
Brazil	Italy	Thailand
Canada	Korea, Dem. P. Rep. of	Turkey
Ceylon	Korea, Rep. of	U.A.R.
Czechoslovakia	Netherlands	United Kingdom
France	New Zealand	U.S.A.
Greece	Peru	U.S.S.R.
Hungary	Poland	

The following Member Body opposed the approval of the Draft :

Sweden

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

ISO Recommendation | R 1746 | November 1970

RUBBER HOSES

BENDING TEST

1. SCOPE

This ISO Recommendation describes a method of determining the behaviour of a rubber hose when bent to a fixed radius.

It also suggests a method for measuring the force necessary to reach the specified radius of curvature.

The test may be carried out whether the hose is empty or under its working pressure.

2. APPARATUS

The apparatus consists of two guides A and B, guide A being fixed in a plane and guide B being able to be moved, in that plane, parallel to A (see Fig. 1).

If the force necessary to reach the specified radius of curvature is required, this may be measured, for example, by means of a fixed guide and a sliding guide operated by two cables with accurately marked points, in conjunction with a system of pulleys and weights (see Fig. 3).

3. SAMPLES

3.1 Types and dimensions of samples

The sample may consist of either a complete manufactured length of hose, or of a disposable portion of hose of adequate length. When the manufactured length is shorter than the length required for the test (see section 4), samples of suitable length should be specially manufactured.

3.2 Number of samples

Unless otherwise stated, use two samples.

4. PROCEDURE

Determine the average external diameter, D, of the hose by using slide calipers.

Draw two parallel and diametrically opposed lines along the length of the hose. If the hose has natural curvature one of the lines should be on the outside of the curve. On each of these lines mark a distance of

$$1.6\,C + n$$

where

C is the minimum diameter of curvature in the individual hose specification;

$n = 2\,D$ with a minimum of 200 mm;

such that the marked distances are exactly opposed. This will ensure a sufficient length for the bend test and adequate support of the hose.

Separate the guides A and B to a distance slightly less than $1.6\,C + n$. Place the hose between the guides so that the ends of the marked distances are parallel with the ends of the guides and remain in this position while the guides are closed to a distance of $C + D$ (see Fig. 1).

Check that the hose on each side is supported to a length of not less than $\frac{n}{2}$.

With the slide calipers set at the value KD (see Fig. 2), present them to the curved portion of the hose at various points. K (usually 0.8) is the maximum coefficient of deformation acceptable in the individual hose specification.

5. TEST REPORT

The test report should include the following information :

(*a*) whether there is a kink in the curved portion of the hose;

(*b*) whether the deformation in the curved portion of the hose exceeds *KD*;

(*c*) where required, the force needed to reach the specified minimum radius of curvature;

(*d*) whether the measurement was carried out on an empty hose or under working pressure.

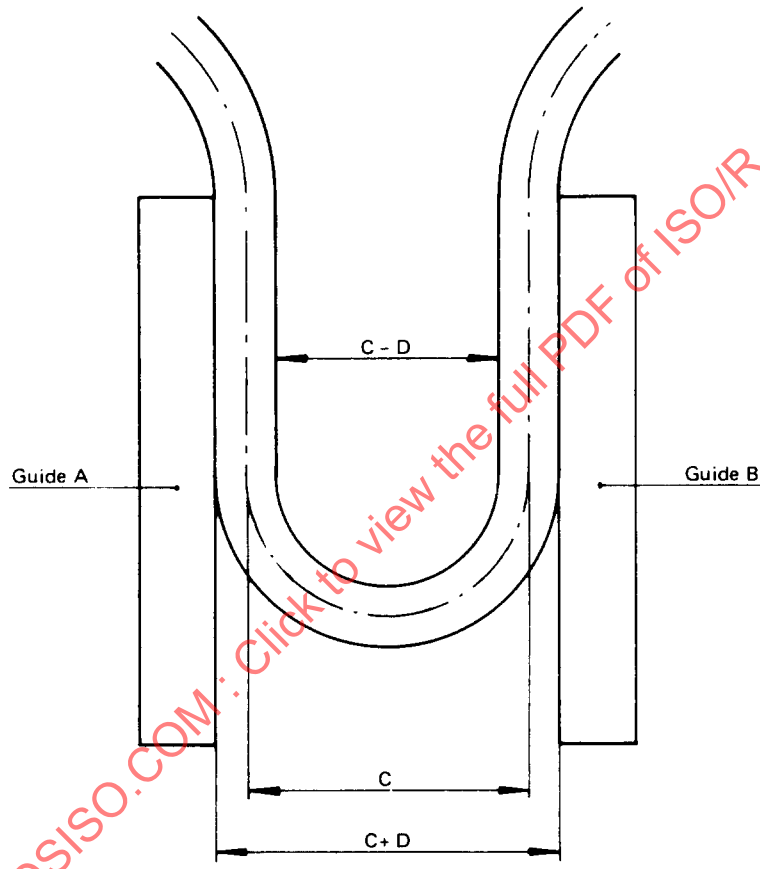

FIG. 1

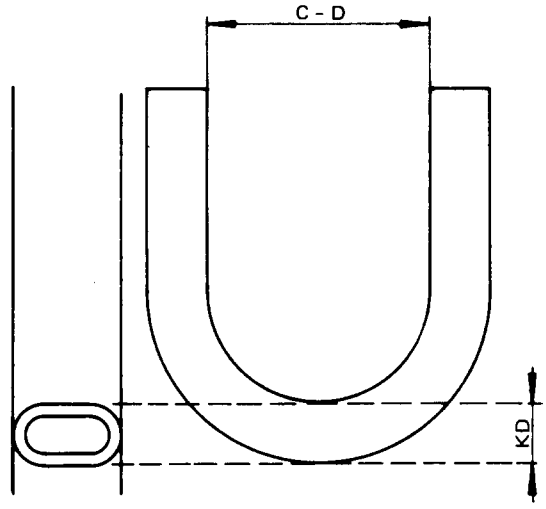

FIG. 2