Kummist või plastist voolikud ja torud. Paindekatsed

Rubber or plastics hoses and tubing - Bending tests

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 21746:1999 sisaldab Euroopa standardi EN 21746:1993 ingliskeelset teksti.	This Estonian standard EVS-EN 21746:1999 consists of the English text of the European standard EN 21746:1993.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.01.1993.	Date of Availability of the European standard is 20.01.1993.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Võtmesõnad: plastics hoses, rubber hoses,

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Descriptors: Rubber products, plastics products, rubber hoses, plastics hoses, mechanical tests, bend tests

English version

Rubber or plastics hoses and tubing - Bending tests (ISO 1746:1983)

Tuyaux et tubes en caoutchouc ou en plastique - Essai de courbure (ISO 1746:1983)

Gummi- oder Kunststoffschläuche mit und ohne Einlage - Biegeprüfungen (ISO 1746:1983)

This European Standard was approved by CEN on 1992-12-04. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Foreword

This European Standard is the endorsement of ISO 1746. Endorsement of ISO 1746 was recommended by CEN/TC 218 "Rubber and plastics hoses and hose assemblies" under whose competence this European Standard will henceforth fall.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at least by July 1993, and conflicting national standards shall be withdrawn at the latest by July 1993.

The Standard was approved and in accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard : Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

Endorsement notice

The text of the International Standard ISO 1746:1983 was approved by CEN as a European Standard without any modification.

International Standard 1746

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Rubber or plastics hoses and tubing — Bending tests

Tuyaux et tubes en caoutchouc ou en plastique — Essais de courbure

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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 developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 1746 was developed by Technical Committee ISO/TC 45, *Rubber and rubber products*, and was circulated to the member bodies in June 1982.

It has been approved by the member bodies of the following countries:

Australia	Hungary	Spain
Austria	India	Sri Lanka
Belgium	Korea, Rep. of	Sweden
Canada	Malaysia	Thailand
China	Netherlands	Turkey
Czechoslovakia	New Zealand	United Kingdom
Denmark	Poland	USA
Egypt, Arab Rep. of	Portugal	USSR
France	Romania	
Germany, F.R.	South Africa, Rep. of	

No member body expressed disapproval of the document.

This second edition cancels and replaces the first edition (i.e. ISO 1746-1976).

Printed in Switzerland

Rubber or plastics hoses and tubing — Bending tests

1 Scope and field of application

This International Standard specifies two methods for the determination of the behaviour of rubber or plastics hoses or tubing when bent to a specified radius.

Method A is suitable for hoses and tubing of bore sizes up to about 80 mm; the size of the apparatus for testing hoses and tubing of larger bore sizes becomes excessive. The method also provides a means of measuring the force required to reach a specified bend radius, and the test may be carried out at a specified internal pressure.

In method B, the bending characteristics, including the force required for bending, may be determined over a range of temperatures from −60 °C to +200 °C. The nature of the apparatus, however, limits its applicability to hoses and tubing of small bore sizes, i.e. up to about 12,5 mm.

2 References

ISO 471, *Rubber — Standard temperatures, humidities and times for the conditioning and testing of test pieces.*

ISO 1826, *Rubber, vulcanized — Time-interval between vulcanization and testing — Specification.*

ISO 4671, *Rubber and plastics hose and hose assemblies — Methods of measurements of dimensions.*[1)]

3 Method A

3.1 Apparatus

The apparatus consists of two guides A and B, guide A being fixed in a plane and guide B being movable in that plane, parallel to, and in line with, guide A (see figure 2).

If it is desired to measure the force required to attain the specified radius of curvature, this may be done, for example, by means of a system of pulleys and weights (see figure 1). Care should be taken to minimize the effect of frictional resistance.

3.2 Test pieces

3.2.1 Types and dimensions

The test pieces shall consist either of complete manufactured lengths of hose or of suitable test lengths. If the manufactured length is shorter than the length required for the test, test pieces of adequate length (see 3.4) shall be specially manufactured.

3.2.2 Number

Unless otherwise specified, two test pieces shall be tested.

3.3 Conditioning of test pieces

No test shall be carried out within 24 h of manufacture.

For evaluations which are intended to be comparable, the test should, as far as possible, be carried out after the same time interval after manufacture. ISO 1826 should be followed for time between sample manufacture and testing.

Before testing, test pieces shall be conditioned for at least 16 h at a standard laboratory temperature and humidity (see ISO 471); this 16 h period may be part of the 24 h interval after manufacture.

3.4 Procedure

Determine the average external diameter D of the hose by means of a suitable measuring instrument as specified in ISO 4671.

Draw two parallel and diametrically opposed lines along the length of the hose. If the hose has natural curvature, one of the lines shall be on the outside of the curve. On each of these lines, mark a distance of $1{,}6C + 2D$ or 200 mm whichever is the longer, where C is twice the minimum bend radius specified in the appropriate specification, so that the marked distances are exactly opposed. This will ensure a sufficient length for the bend test and adequate support of the hose.

1) At present at the stage of draft.