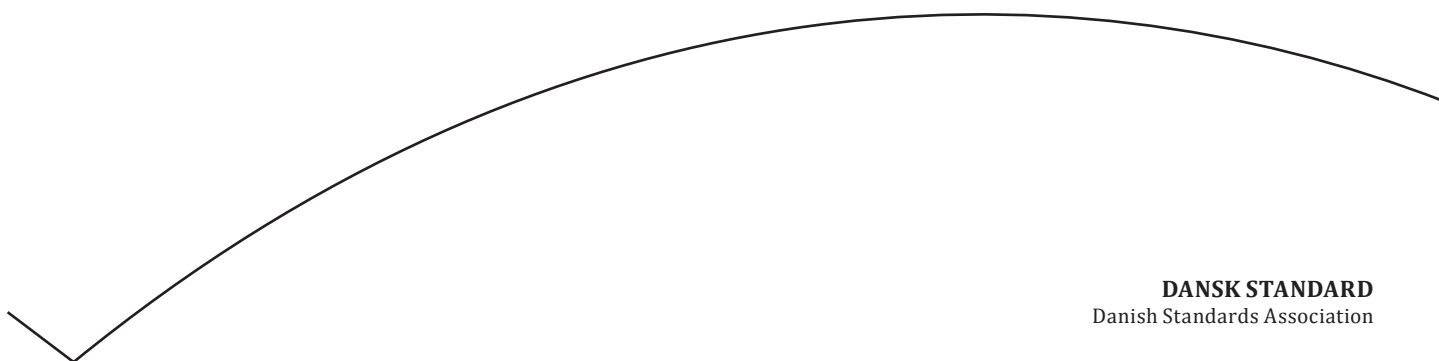


This is a preview of "DS/EN ISO 10619-2:20...". Click here to purchase the full version from the ANSI store.

## Slanger og rør af gummi og plast – Måling af fleksibilitet og stivhed – Del 2: Bøjeprøvning ved lavere temperaturer end rumtemperatur

Rubber and plastics hoses and tubing – Measurement of flexibility and stiffness – Part 2: Bending tests at sub-ambient temperatures (ISO 10619-2:2017)



**DANSK STANDARD**  
Danish Standards Association

Göteborg Plads 1  
DK-2150 Nordhavn

Tel: +45 39 96 61 01

Tel: +45 39 96 61 01

dansk.standard@ds.dk

www.ds.dk

This is a preview of "DS/EN ISO 10619-2:20...". Click here to purchase the full version from the ANSI store.

DS projekt: M318404

ICS: 23.040.70

**Første del af denne publikations betegnelse er:**

**DS/EN ISO, hvilket betyder, at det er en international standard, der har status både som europæisk og dansk standard.**

**Denne publikations overensstemmelse er:**

**IDT med: ISO 10619-2:2017**

**IDT med: EN ISO 10619-2:2018**

**DS-publikationen er på engelsk.**

**Denne publikation erstatter: [DS/EN ISO 10619-2:2012](#)**

---

### **DS-publikationstyper**

Dansk Standard udgiver forskellige publikationstyper.

Typen på denne publikation fremgår af forsiden.

Der kan være tale om:

#### **Dansk standard**

- standard, der er udarbejdet på nationalt niveau, eller som er baseret på et andet lands nationale standard, eller
- standard, der er udarbejdet på internationalt og/eller europæisk niveau, og som har fået status som dansk standard

#### **DS-information**

- publikation, der er udarbejdet på nationalt niveau, og som ikke har opnået status som standard, eller
- publikation, der er udarbejdet på internationalt og/eller europæisk niveau, og som ikke har fået status som standard, fx en teknisk rapport, eller
- europæisk præstandard

#### **DS-håndbog**

- samling af standarder, eventuelt suppleret med informativt materiale

#### **DS-hæfte**

- publikation med informativt materiale

Til disse publikationstyper kan endvidere udgives

- tillæg og rettelsesblade

### **DS-publikationsform**

Publikationstyperne udgives i forskellig form som henholdsvis

- fuldtekstpublikation (publikationen er trykt i sin helhed)
- godkendelsesblad (publikationen leveres i kopi med et trykt DS-omslag)
- elektronisk (publikationen leveres på et elektronisk medie)

### **DS-betegnelse**

Alle DS-publikationers betegnelse begynder med DS efterfulgt af et eller flere præfikser og et nr., fx **DS 383**, **DS/EN 5414** osv. Hvis der efter nr. er angivet et **A** eller **Cor**, betyder det, enten at det er et **tillæg** eller et **rettelsesblad** til hovedstandard, eller at det er indført i hovedstandard.

DS-betegnelse angives på forsiden.

### **Overensstemmelse med anden publikation:**

Overensstemmelse kan enten være IDT, EQV, NEQ eller MOD

- **IDT:** Når publikationen er identisk med en given publikation.
- **EQV:** Når publikationen teknisk er i overensstemmelse med en given publikation, men præsentationen er ændret.
- **NEQ:** Når publikationen teknisk eller præsentationsmæssigt ikke er i overensstemmelse med en given standard, men udarbejdet på baggrund af denne.
- **MOD:** Når publikationen er modificeret i forhold til en given publikation.

This is a preview of "DS/EN ISO 10619-2:20...". Click here to purchase the full version from the ANSI store.

EUROPÄISCHE NORM

February 2018

ICS 23.040.70

Supersedes EN ISO 10619-2:2011

English Version

## Rubber and plastics hoses and tubing - Measurement of flexibility and stiffness - Part 2: Bending tests at sub-ambient temperatures (ISO 10619-2:2017)

Tuyaux et tubes en caoutchouc et en plastique  
- Mesurage de la flexibilité et de la rigidité -  
Partie 2: Essais de courbure à des températures  
inférieures à l'ambiante (ISO 10619-2:2017)

Gummi- und Kunststoffschläuche mit und  
ohne Einlage - Bestimmung der Biegsamkeit  
und Steifigkeit - Teil 2: Biegeprüfungen  
bei Temperaturen unterhalb der  
Umgebungstemperatur (ISO 10619-2:2017)

This European Standard was approved by CEN on 11 December 2017.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

This is a preview of "DS/EN ISO 10619-2:20...". [Click here to purchase the full version from the ANSI store.](#)

## **Contents**

Page

<b>European foreword .....</b>	<b>3</b>
--------------------------------	----------

This is a preview of "DS/EN ISO 10619-2:20...". Click here to purchase the full version from the ANSI store.

## European foreword

This document ([EN ISO 10619-2:2018](#)) has been prepared by Technical Committee ISO/TC 45 "Rubber and plastics hoses and hose assemblies" in collaboration with Technical Committee CEN/TC 218 "Rubber and plastics hoses and hose assemblies" the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2018, and conflicting national standards shall be withdrawn at the latest by August 2018.

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

This document supersedes [EN ISO 10619-2:2011](#).

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### Endorsement notice

The text of [ISO 10619-2:2017](#) has been approved by CEN as [EN ISO 10619-2:2018](#) without any modification.

This is a preview of "DS/EN ISO 10619-2:20...". [Click here to purchase the full version from the ANSI store.](#)

Second edition  
2017-11-22

---

---

# Rubber and plastics hoses and tubing — Measurement of flexibility and stiffness —

## Part 2: Bending tests at sub-ambient temperatures

*Tuyaux et tubes en caoutchouc et en plastique — Mesurage de la flexibilité et de la rigidité —*

*Partie : Essais de courbure à des températures inférieures à l'ambiante*



Reference number  
ISO 10619-2:2017(E)

© ISO 2017

This is a preview of "DS/EN ISO 10619-2:20...". Click here to purchase the full version from the ANSI store.



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
copyright@iso.org  
www.iso.org

This is a preview of "DS/EN ISO 10619-2:20...". Click here to purchase the full version from the ANSI store.

## Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Method A</b> .....	<b>2</b>
4.1 General.....	2
4.2 Apparatus.....	2
4.3 Hose test piece .....	2
4.3.1 Type.....	2
4.3.2 Number of hose test pieces.....	2
4.4 Test temperature.....	2
4.5 Procedure.....	3
4.6 Expression of results.....	3
4.7 Test report.....	3
<b>5 Method B</b> .....	<b>4</b>
5.1 General.....	4
5.2 Apparatus.....	4
5.3 Hose test pieces.....	4
5.4 Test temperature.....	4
5.5 Procedure.....	4
5.6 Test report.....	5
<b>6 Method C</b> .....	<b>5</b>
6.1 General.....	5
6.2 Apparatus.....	5
6.3 Hose test piece .....	5
6.4 Test temperature.....	5
6.5 Procedure.....	6
6.6 Expression of results.....	6
6.7 Test report.....	7

## 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 1, *Rubber and plastics hoses and hose assemblies*.

This second edition cancels and replaces the first edition ([ISO 10619-2:2011](#)), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

- the unit used in the formula to calculate the flexural stiffness in [6.5](#) and [6.6](#) has been changed.

A list of all parts in the [ISO 10619 series](#) can be found on the ISO website.

This is a preview of "DS/EN ISO 10619-2:20...". Click here to purchase the full version from the ANSI store.

# Rubber and plastics hoses and tubing — Measurement of flexibility and stiffness —

## Part 2: Bending tests at sub-ambient temperatures

**WARNING** — Persons using this document should be familiar with normal laboratory practice. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices.

### 1 Scope

This document specifies two methods for measuring the stiffness and one method for the determination of the flexibility of rubber and plastics hoses and tubing when they are bent to a specific radius at sub-ambient temperatures.

Method A is suitable for non-collapsible rubber and plastics hoses and tubing with a bore of up to and including 25 mm. This method provides a means of measuring the stiffness of the hose or tubing when the temperature is reduced from a standard laboratory temperature.

Method B is suitable for rubber and plastics hoses and tubing with a bore of up to 100 mm and provides a means of assessing the flexibility of the hose or tubing when bent around a mandrel at a specified sub-ambient temperature. It can also be used as a routine quality control test.

Method C is suitable for rubber and plastics hoses and tubing with a bore of 100 mm and greater. This method provides a means of measuring the stiffness of the hose and tubing at sub-ambient temperatures. This method is only suitable for hoses and tubing which are non-collapsible.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[ISO 1402](#), *Rubber and plastics hoses and hose assemblies — Hydrostatic testing*

[ISO 8330](#), *Rubber and plastics hoses and hose assemblies — Vocabulary*

[ISO 23529](#), *Rubber — General procedures for preparing and conditioning test pieces for physical test methods*