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

**Part 3:  
Bending tests at high and low  
temperatures**

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

*Partie 3: Essais de courbure à des températures basses et élevées*

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Published in Switzerland

## Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 10619-3 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 1, *Hoses (rubber and plastics)*.

ISO 10619 consists of the following parts, under the general title *Rubber and plastics hoses and tubing — Measurement of flexibility and stiffness*:

- *Part 1: Bending tests at ambient temperature*
- *Part 2: Bending tests at sub-ambient temperatures*
- *Part 3: Bending tests at high and low temperatures*

## Introduction

This method was originally included in ISO 1746<sup>1)</sup>. This part of ISO 10619 allows for samples to be tested at sub-ambient temperatures and at elevated temperatures of up to 200 °C.

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1) Withdrawn.

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

## Part 3: Bending tests at high and low temperatures

**WARNING** — Persons using this part of ISO 10619 should be familiar with normal laboratory practice. This part of ISO 10619 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 and to ensure compliance with any national regulatory conditions.

### 1 Scope

This part of ISO 10619 specifies a method for the determination of the bending characteristics of rubber and plastics hoses and tubing, including the force required for bending, over a range of temperatures from  $-60\text{ }^{\circ}\text{C}$  to  $+200\text{ }^{\circ}\text{C}$ . The nature of the apparatus, however, limits its applicability to rubber and plastics hoses and tubing of small internal diameter, i.e. up to 12,5 mm.

### 2 Normative references

The following referenced documents are indispensable for the application 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 4671, *Rubber and plastics hoses and hose assemblies — Methods of measurement of the dimensions of hoses and the lengths of hose assemblies*

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*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8330 and the following apply.

#### 3.1

##### **bending**

shaping or forcing something straight into a curve or angle at a specified temperature

#### 3.2

##### **flexibility**

ease of bending a hose without it being damaged by kinking, collapse, breaking or cracking

NOTE A hose can be bent around a mandrel, for example.

#### 3.3

##### **stiffness**

resistance of a hose to bending