
**Rubber- or plastic-coated fabrics —
Physical and mechanical test —
Determination of bending force**

*Supports textiles revêtus de caoutchouc ou de plastique — Essai
physique et mécanique — Détermination de la force de flexion*

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Foreword

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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).

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).

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For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products* Subcommittee SC 4, *Products (other than hoses)*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 248, *Textiles and textile products*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Rubber- or plastic-coated fabrics — Physical and mechanical test — Determination of bending force

1 Scope

This document specifies a test method for the determination of the bending force of rubber or plastics-coated fabrics.

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 2231:1989, *Rubber- or plastics-coated fabrics — Standard atmospheres for conditioning and testing*

ISO 2286-3, *Rubber- or plastics-coated fabrics — Determination of roll characteristics — Part 3: Method for determination of thickness*

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/>

3.1

bending force

force exerted by the specimen on the measuring bar at a specified *bending angle* (3.2), *bending length* (3.3) and *bending rate* (3.4)

3.2

bending angle

angle at which the *bending force* (3.1) is measured

3.3

bending length

length around which the specimen is bent

Note 1 to entry: The bending length is the distance between the clamping device of the specimen and the bar onto which the force of the specimen is transferred.

3.4

bending rate

rate of bending of the specimen

3.5

compression-bending

compression of the coating layer during bending

3.6 extension-bending

extension of the coating layer during bending

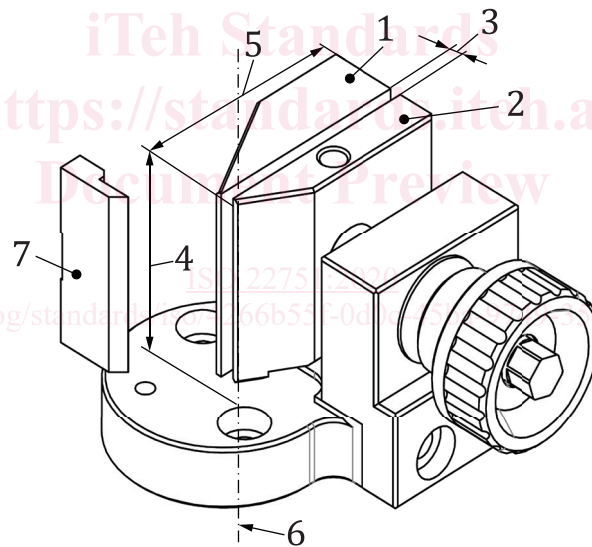
4 Principle

The bending force is determined based on the bar method/two-point method. In this method, the specimen is clamped in a rotating fixture. During the rotation, the specimen exerts a force onto a bar. The force acting at a specified bending angle is measured.

5 Apparatus

5.1 A device for determining the bending force according to the bar method (two-point bending method) comprising the following.

5.1.1 A clamping mechanism in which the specimen shall be able to be clamped vertically. The clamping jaws shall have a depth of (35 ± 1) mm and a minimum width of at least 30 mm (see [Figure 1](#)). The clamping device shall enable parallel clamping with an even pressure distribution on the specimen. It shall move smoothly and allow tightening at known clamping pressure, i.e. by torque wrench or any other adapted method. The clamping device shall allow for affixing the specimen without it touching the bar in its initial position.



Key

- 1 fixed clamping jaws
- 2 moving clamping jaws
- 3 aperture > 6 mm
- 4 jaw width > 30 mm
- 5 jaw depth (35 ± 1) mm
- 6 pivot axis
- 7 vertical metering bar

Figure 1 — Clamping jaws

5.1.2 A means of rotating the clamping device about the pivot axis. The pivot axis is located exactly at the front edge of the fixed clamp (deviation of $\pm 0,1$ mm; see [Figure 1](#)). Rotation shall be possible within