INTERNATIONAL STANDARD

ISO 20932-3

First edition
2018-11

Textiles — Determination of the elasticity of fabrics —

Part 3: Narrow fabrics

Textiles — Détermination de l'élasticité des étoffes —

Partie 3: Etoffes étroites

Reference number
ISO 20932-3:2018(E)

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Published in Switzerland

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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 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).

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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.

This document was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 24, *Conditioning atmospheres and physical tests for textile fabrics*.

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.

A list of all parts in the ISO 20932 series can be found on the ISO website.

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Introduction

This document was developed as a result of technical advancements in yarn and fabric structures and properties, which increase product range and developments.

This document is based on EN 14704-3[1].

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Textiles — Determination of the elasticity of fabrics —

Part 3:
Narrow fabrics

1 Scope

This document specifies the test methods which can be used to measure the elasticity and related properties of narrow fabrics. Two methods are itemized: one for the purpose of product quality assurance (method A) and the other for product performance when in use (method B).

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 139, *Textiles — Standard atmospheres for conditioning and testing*

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

ISO 10012, *Measurement management systems — Requirements for measurement processes and measuring equipment*

ISO 22198, *Textiles — Fabrics — Determination of width and length*

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
narrow fabric
woven or knitted construction intended for use as a trim, binding, edging, strapping or harness, and designed to be used in its full width

[SOURCE: ISO 20932-1:2018, 3.1]

3.2
elasticity
<material> ability to recover original size and shape immediately after the removal of the force causing deformation

[SOURCE: ISO 20932-1:2018, 3.2]

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3.3
constant-rate-of-extension testing machine
CRE testing machine
tensile testing machine provided with one clamp which is stationary and another clamp, which moves with a constant speed throughout the test, the entire testing system being virtually free from deflection

[SOURCE: ISO 20932-1:2018, 3.3]

3.4
strip test specimen
test specimen in which the full width is gripped in the jaws of the testing machine

[SOURCE: ISO 20932-1:2018, 3.4]

3.5
gauge length
distance between the two effective clamping points of a testing device

Note 1 to entry: For this method where line clamps are employed, it is the distance between the two contact points.

3.6
slack mounting
insertion of a strip test specimen in the line clamps of the upper jaw, allowing it to hang freely under its own weight, guided by the hand to ensure perpendicular alignment to the line of pulling force, without any force being applied

[SOURCE: ISO 20932-1:2018, 3.7]

3.7
initial length
length of the test specimen between the two effective clamping or holding points, at the beginning of the test (after slack mounting or under specified pretension)

[SOURCE: ISO 20932-1:2018, 3.8]

3.8
pretension
force applied to a test specimen at the beginning of certain tests

[SOURCE: ISO 20932-1:2018, 3.9]

3.9
extension
increase in length of a test specimen during testing

Note 1 to entry: Extension is expressed in units of the length.

[SOURCE: ISO 20932-1:2018, 3.10]

3.10
elongation
ratio of the extension of the test specimen to its initial length

Note 1 to entry: Elongation is expressed as a percentage.

[SOURCE: ISO 20932-1:2018, 3.11]

3.11
maximum force
force at the position when a test specimen is taken to a fixed extension

Note 1 to entry: Maximum forced is expressed in newtons.

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[SOURCE: ISO 20932-1:2018, 3.12]

3.12
maximum extension
extension recorded in millimetres at the position when a test specimen is taken to a fixed load

Note 1 to entry: Maximum extension is expressed in units of the length.

[SOURCE: ISO 20932-1:2018, 3.13]

3.13
force at specified elongation
force measured at a given elongation on either the load or unload curves

[SOURCE: ISO 20932-1:2018, 3.14]

3.14
cycle
process whereby a fabric is taken from the gauge length to a fixed load or fixed extension or elongation, and returned to gauge length

[SOURCE: ISO 20932-1:2018, 3.15]

3.15
force decay due to time
loss of force measured over time when a test specimen is stretched to a specified elongation or force and held in this position for a given time period

Note 1 to entry: The decay in force is expressed as a percentage of the original force recorded at the specified position (see Annex A, Figure A.1).

[SOURCE: ISO 20932-1:2018, 3.16]

3.16
force decay due to exercising
loss of force, calculated and expressed as a percentage, as measured and recorded at the same elongation point on two different cycles when the test specimen is cycled several times between the gauge length and a specified elongation

Note 1 to entry: See Annex A, Figure A.1.

[SOURCE: ISO 20932-1:2018, 3.17]

3.17
permanent deformation
ratio of unrecovered extension of the test specimen after cycling (to a specified force or specified extension) to its initial length

Note 1 to entry: Permanent deformation is expressed as a percentage.

[SOURCE: ISO 20932-1:2018, 3.18]

3.18
recovered elongation
complement of permanent deformation to 100 %

[SOURCE: ISO 20932-1:2018, 3.19]

3.19
elastic recovery
recovered elongation of the total elongation

Note 1 to entry: Elastic recovery is expressed as a percentage.

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