



SLOVENSKI STANDARD SIST EN ISO 13997:2023

01-september-2023

Nadomešča:

SIST EN ISO 13997:2000

SIST EN ISO 13997:2000/AC:2001

Varovalna obleka - Mehanske lastnosti - Ugotavljanje odpornosti proti urezu z ostrimi predmeti (ISO 13997:2023)

Protective clothing - Mechanical properties - Determination of resistance to cutting by sharp objects (ISO 13997:2023)

Schutzkleidung - Mechanische Eigenschaften - Bestimmung des Widerstandes gegen Schnitte mit scharfen Gegenständen (ISO 13997:2023)

Vêtements de protection - Propriétés mécaniques - Détermination de la résistance à la coupure par des objets tranchants (ISO 13997:2023)

Ta slovenski standard je istoveten z: EN ISO 13997:2023

ICS:

13.340.10 Varovalna obleka Protective clothing

SIST EN ISO 13997:2023 en,fr,de

EUROPEAN STANDARD

EN ISO 13997

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2023

ICS 13.340.10

Supersedes EN ISO 13997:1999, EN ISO
13997:1999/AC:2000

English Version

Protective clothing - Mechanical properties -
Determination of resistance to cutting by sharp objects
(ISO 13997:2023)

Vêtements de protection - Propriétés mécaniques -
Détermination de la résistance à la coupure par des
objets tranchants (ISO 13997:2023)

Schutzkleidung - Mechanische Eigenschaften -
Bestimmung des Widerstandes gegen Schnitte mit
scharfen Gegenständen (ISO 13997:2023)

This European Standard was approved by CEN on 16 June 2023.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 13997:2023](https://standards.iteh.ai/catalog/standards/sist/4b5bdebb-8da3-496f-acf1-3b4a41c1a11d/sist-en-iso-13997-2023)

<https://standards.iteh.ai/catalog/standards/sist/4b5bdebb-8da3-496f-acf1-3b4a41c1a11d/sist-en-iso-13997-2023>

European foreword

This document (EN ISO 13997:2023) has been prepared by Technical Committee ISO/TC 94 "Personal safety -- Personal protective equipment" in collaboration with Technical Committee CEN/TC 162 "Protective clothing including hand and arm protection and lifejackets" the secretariat of which is held by DIN.

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 December 2023, and conflicting national standards shall be withdrawn at the latest by December 2023.

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 13997:1999.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

<https://standards.iteh.ai/catalog/standards/sist/4b5bdebb-8da3-496f-acf1-3b4a41c1d/sist-en-iso-13997-2023>

Endorsement notice

The text of ISO 13997:2023 has been approved by CEN as EN ISO 13997:2023 without any modification.

INTERNATIONAL
STANDARD

ISO
13997

Second edition
2023-06

**Protective clothing — Mechanical
properties — Determination of
resistance to cutting by sharp objects**

*Vêtements de protection — Propriétés mécaniques — Détermination
de la résistance à la coupure par des objets tranchants*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 13997:2023](https://standards.iteh.ai/catalog/standards/sist/4b5bdebb-8da3-496f-acf1-3b4a41c1a11d/sist-en-iso-13997-2023)

<https://standards.iteh.ai/catalog/standards/sist/4b5bdebb-8da3-496f-acf1-3b4a41c1a11d/sist-en-iso-13997-2023>



Reference number
ISO 13997:2023(E)

© ISO 2023

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 13997:2023

<https://standards.iteh.ai/catalog/standards/sist/4b5bdebb-8da3-496f-acf1-3b4a41c1a11d/sist-en-iso-13997-2023>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2023

All rights reserved. Unless otherwise specified, or required in the context of its implementation, 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
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative reference	1
3 Terms and definitions	1
4 Sampling	2
4.1 General.....	2
4.2 Textiles and other materials.....	2
4.3 Gloves.....	3
4.4 Conditioning.....	3
5 Test method	4
5.1 Principle.....	4
5.2 Test apparatus.....	5
5.2.1 Rigid framework.....	6
5.2.2 Force application system.....	7
5.2.3 Specimen holder mount.....	7
5.2.4 Specimen holder.....	7
5.2.5 Specimen securing clamp.....	7
5.2.6 Blades.....	8
5.2.7 Blade holder.....	9
5.2.8 Cutting-motion system.....	9
5.2.9 Cut-stroke length measurement system.....	9
5.3 Calibration.....	9
5.3.1 Beam balancing procedure.....	9
5.3.2 Cutting speed adjustment.....	10
5.3.3 Validation of blades.....	10
5.4 Test procedure.....	11
5.4.1 Specimen mounting.....	11
5.4.2 Test procedure for measuring the cutting stroke length.....	12
5.4.3 Test procedure for determining the calculated cutting force.....	12
5.4.4 Calculations.....	13
6 Test report	13
Annex A (informative) Inter-laboratory test data analysis	15
Annex B (normative) Calculated cutting force determination	17
Annex C (normative) Testing of the calibration material (see 5.3.3.1)	22
Bibliography	23

ISO 13997:2023(E)

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).

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).

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 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 94, *Personal safety — Personal protective equipment*, Subcommittee SC 13, *Protective clothing*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 162, *Protective clothing including hand and arm protection and lifejackets*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 13997:1999), which has been technically revised.

This document has been completely rewritten based on the current practices and experience in cut testing as well as comparing other cut test methods standards around the world. The main changes are as follows:

- new blades and revised range of cutting stroke length for the blades to be valid;
- new neoprene, with calibration data and [Annex C](#);
- new specimen securing clamp;
- new [Figure 3](#);
- new paper sheet in the specimen assembly;
- new data form ILT in [Annex A](#);
- a few new information in [Annex B](#) for calculation;
- the neoprene control is only referenced to in [Annex C](#).

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.

Introduction

Although textiles, composites, leather, rubbers and reinforced materials may resist cutting by sharp edges in different ways, a test method for evaluating the resistance to cut of materials in protective clothing needs to be applicable to all materials. The test described in this document provides a method that allows calculations of the downwards (normal) force required to cause a blade drawn across the sample for a fixed distance to cut through the specimen.

The performance of protective clothing materials may be classified using the numerical values obtained from this test.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 13997:2023](https://standards.iteh.ai/catalog/standards/sist/4b5bdebb-8da3-496f-acf1-3b4a41c11d/sist-en-iso-13997-2023)

<https://standards.iteh.ai/catalog/standards/sist/4b5bdebb-8da3-496f-acf1-3b4a41c11d/sist-en-iso-13997-2023>

