

Second edition
2022-03

Requirements for sleeping bags — Part 1: Thermal, mass and dimensional requirements for sleeping bags designed for limit temperatures of -20°C and higher

Exigences pour les sacs de couchage —

Partie 1: Exigences thermiques, de masse et dimensionnelles pour les sacs de couchage conçus pour les températures limites de -20 °C et plus



Reference number
ISO 23537-1:2022(E)

© ISO 2022



COPYRIGHT PROTECTED DOCUMENT

© ISO 2022

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

This is a preview of "ISO 23537-1:2022". Click here to purchase the full version from the ANSI store.

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Requirements	3
4.1 Thermal properties for lower temperature limits	3
4.2 Water vapour permeability index	3
4.3 Inside dimensions	4
4.3.1 Inside length.....	4
4.3.2 Maximum inside width.....	4
4.3.3 Inside foot width	4
4.4 Total mass.....	4
5 Test methods	4
5.1 Testing of the thermal properties	4
5.1.1 Principle.....	4
5.1.2 Thermal manikin	4
5.1.3 Climatic room.....	5
5.1.4 Artificial ground.....	5
5.1.5 Test samples and pre-treatment.....	5
5.1.6 Thermal resistance for posture 1 $R_c(1)$	5
5.1.7 Test procedure.....	6
5.1.8 Calculation of temperatures of the range of utility.....	6
5.2 Testing of the water vapour permeability index.....	6
5.3 Measurement of inside dimension.....	7
5.3.1 Inside length.....	7
5.3.2 Maximum inside length.....	7
5.3.3 Inside foot width	7
5.4 Testing of the total mass.....	7
6 Test report	7
7 Labelling	8
7.1 Graph for the range of utility.....	8
7.2 Marking.....	8
7.3 Information supplied to the consumer.....	9
Annex A (normative) Reference values of thermal resistance for calibration of thermal manikin	11
Annex B (informative) Precision of test results	13
Annex C (normative) Physiological model for calculation of range of utility	14
Annex D (informative) Warning of misuse of temperature rating	19
Annex E (informative) Rationale	20
Annex F (informative) Test method for maximum temperature	22

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 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 83, *Sports and other recreational facilities and equipment*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 136, *Sports, playground and other recreational facilities and equipment*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 23537-1:2016), which has been technically revised. It also incorporates the Amendment ISO 23537-1:2016/Amd.1:2018.

The main changes are as follows:

- update of [Clause 3](#);
- update of the scope to exclude extreme climate conditions;
- revision of requirements for lower temperature limits;
- revision of test methods;
- revision of [Clause 7](#);
- revision of the reference values of thermal resistance for calibration of thermal manikin.

A list of all parts in the ISO 23537 series can be found on the ISO website.

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.

This is a preview of "ISO 23537-1:2022". [Click here to purchase the full version from the ANSI store.](#)

Introduction

ISO 23537-2 specifies requirements for material performance.

This document considers important aspects to the thermal performance of the sleeping bag.

In this document, consideration was given to the need to continue to reduce inter laboratory variability of the thermal testing and a number of test parameters have been tightened as a consequence.

A rationale is given in [Annex E](#).