



SLOVENSKI STANDARD
SIST EN 60068-2-1:2008
01-januar-2008

BUXca Yý U.
SIST EN 60068-2-1:2001
SIST EN 60068-2-1:2001/A1:2001
SIST EN 60068-2-1:2001/A2:2001

Okoljski preskusi - 2-1. del: Preskusi - Preskusi A: Mraz (IEC 60068-2-1:2007)

Environmental testing - Part 2-1: Tests - Tests A: Cold

Umgebungseinflüsse - Teil 2-1: Prüfverfahren - Prüfung A: Kälte

(standards.iteh.ai)

Essais d'environnement - Partie 2-1: Essais - Essais A: Froid

[SIST EN 60068-2-1:2008](https://standards.iteh.ai/catalog/standards/sist/3b5eaf8b-f2b5-4012-ad94-9e5/sist-en-60068-2-1-2008)

Ta slovenski standard je istoveten z: EN 60068-2-1:2007

ICS:

19.040	Preskušanje v zvezi z okoljem	Environmental testing
--------	-------------------------------	-----------------------

SIST EN 60068-2-1:2008

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60068-2-1:2008

<https://standards.iteh.ai/catalog/standards/sist/3b5eaf8b-f2b5-4012-ad94-457a1e9149e5/sist-en-60068-2-1-2008>

English version

**Environmental testing -
Part 2-1: Tests -
Test A: Cold
(IEC 60068-2-1:2007)**

Essais d'environnement -
Partie 2-1: Essais -
Essai A: Froid
(CEI 60068-2-1:2007)

Umgebungseinflüsse -
Teil 2-1: Prüfverfahren -
Prüfung A: Kälte
(IEC 60068-2-1:2007)

iTeh STANDARD PREVIEW

This European Standard was approved by CENELEC on 2007-04-01. CENELEC 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 Central Secretariat or to any CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 104/407/FDIS, future edition 6 of IEC 60068-2-1, prepared by IEC TC 104, Environmental conditions, classification and methods of test, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60068-2-1 on 2007-04-01.

This European Standard supersedes EN 60068-2-1:1993 + A1:1993 + A2:1994.

EN 60068-2-1:2007 deals with cold tests applicable both to non heat-dissipating and heat-dissipating specimens. For non heat-dissipating specimens, Tests Ab and Ad do not deviate essentially from earlier issues. Test Ae has been added primarily for testing equipment that requires being operational throughout the test including the conditioning periods.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2008-01-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2010-04-01

Annex ZA has been added by CENELEC.

iTeh STANDARD PREVIEW
Endorsement notice
(standards.iteh.ai)

The text of the International Standard IEC 60068-2-1:2007 was approved by CENELEC as a European Standard without any modification.

SIST EN 60068-2-1:2008

<https://standards.iteh.ai/catalog/standards/sist/3b5eaf8b-f2b5-4012-ad94-457a1e9149e5/sist-en-60068-2-1-2008>

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1	1988	Environmental testing - Part 1: General and guidance	EN 60068-1 ¹⁾	1994
IEC 60068-2-14	- ²⁾	Environmental testing - Part 2: Tests - Test N: Change of temperature	EN 60068-2-14	1999 ³⁾
IEC 60068-3-1	- ²⁾	Environmental testing - Part 3: Background information - Section 1: Cold and dry heat tests	EN 60068-3-1	1999 ³⁾
IEC 60068-3-5	- ²⁾	Environmental testing - Part 3-5: Supporting documentation and guidance - Confirmation of the performance of temperature chambers	EN 60068-3-5	2002 ³⁾
IEC 60068-3-7	- ²⁾	Environmental testing - Part 3-7: Supporting documentation and guidance - Measurements in temperature chambers for tests A and B (with load)	EN 60068-3-7	2002 ³⁾
IEC 60068-5-2	- ²⁾	Environmental testing - Part 5: Guide to drafting of test methods - Terms and definitions	EN 60068-5-2	1999 ³⁾
IEC 60721	Series	Classification of environmental conditions	EN 60721	Series

¹⁾ EN 60068-1 is based on IEC 60068-1:1988 + corr. October 1988 and A1:1992.

²⁾ Undated reference.

³⁾ Valid edition at date of issue.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60068-2-1:2008

<https://standards.iteh.ai/catalog/standards/sist/3b5eaf8b-f2b5-4012-ad94-457a1e9149e5/sist-en-60068-2-1-2008>



INTERNATIONAL STANDARD

NORME INTERNATIONALE

BASIC SAFETY PUBLICATION
PUBLICATION FONDAMENTALE DE SÉCURITÉ

Environmental testing –
Part 2-1: Tests – Test A: Cold
(standards.iteh.ai)

Essais d'environnement –
Partie 2-1: Essais – Essai A: Froid
SIST EN 60068-2-1:2008
<https://standards.iteh.ai/catalog/standards/sist/3b5caf8b-f2b5-4012-ad94-457a1e9149e5/sist-en-60068-2-1-2008>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX

N

CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope and object.....	7
2 Normative references	7
3 Terms and definitions	8
4 Application of tests for non heat-dissipating specimens versus tests for heat-dissipating specimens	8
4.1 General.....	8
4.2 Ascertaining high or low air velocity in the test chamber	8
4.3 Non heat-dissipating specimens	9
4.4 Testing of heat-dissipating specimens	9
4.5 Temperature monitoring	9
4.6 Packaging	9
4.7 Diagrammatic representations	9
5 Test description.....	10
5.1 General.....	10
5.2 Test Ab: Cold for non heat-dissipating specimens with gradual change of temperature.....	10
5.2.1 Object	10
5.2.2 General description	11
5.3 Test Ad: Cold for heat-dissipating specimens with gradual change of temperature that are powered after initial temperature stabilization	11
5.3.1 Object	11
5.3.2 General description	11
5.4 Test Ae: Cold for heat-dissipating specimens with gradual change of temperature that are required to be powered throughout the test.....	11
5.4.1 Object	11
5.4.2 General description	11
5.4.3 Energizing the specimen	12
6 Test procedure	12
6.1 Confirmation of performance	12
6.2 Working space	12
6.3 Thermal radiation	12
6.4 Specimen with artificial cooling.....	12
6.5 Mounting	13
6.6 Severities	13
6.6.1 Temperature.....	13
6.6.2 Duration	13
6.7 Preconditioning	13
6.8 Initial measurements	13
6.9 Conditioning	13
6.10 Intermediate measurements	14
6.11 Final temperature ramp	14
6.12 Recovery.....	14
6.13 Final measurements	14

7	Information to be given in the relevant specification	14
8	Information to be given in the test report	15
Figure 1 – Block diagram tests A: Cold		10

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60068-2-1:2008

<https://standards.iteh.ai/catalog/standards/sist/3b5eaf8b-f2b5-4012-ad94-457a1e9149e5/sist-en-60068-2-1-2008>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ENVIRONMENTAL TESTING –**Part 2-1: Tests – Test A: Cold**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60068-2-1 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test.

This sixth edition cancels and replaces the fifth edition issued in 1990. It includes the revised text of the fifth edition, amendment 1 issued in 1993 and amendment 2 issued in 1994.

This sixth edition deals with cold tests applicable both to non heat-dissipating and heat-dissipating specimens. For non heat-dissipating specimens, Tests Ab and Ad do not deviate essentially from earlier issues. Test Ae has been added primary for testing equipment that requires being operational throughout the test including the conditioning periods.

The text of this standard is based on the following documents:

FDIS	Report on voting
104/407/FDIS	104/410/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

It has the status of a basic safety publication in accordance with IEC Guide 104.

A list of all the parts in the IEC 60068 series, under the general title *Environmental testing*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60068-2-1:2008

<https://standards.iteh.ai/catalog/standards/sist/3b5eaf8b-f2b5-4012-ad94-457a1e9149e5/sist-en-60068-2-1-2008>