SLOVENSKI STANDARD
oSIST prEN IEC 60068-3-6:2024

01-januar-2024

Okoljsko preskušanje - 3-6. del: Podporna dokumentacija in navodilo - Potrjevanje tehničnih lastnosti toplotnih/vlažnih komor

Environmental testing - Part 3-6: Supporting documentation and guidance - Confirmation of the performance of temperature/humidity chambers

Essais d'environnement - Partie 3-6: Documentation d'accompagnement et recommandations - Confirmation des performances des chambres d'essai en température/humidité

Ta slovenski standard je istoveten z: **prEN IEC 60068-3-6:2023**

ICS:

01.110	Tehnična dokumentacija za izdelke	Technical product documentation
19.040	Preskušanje v zvezi z okoljem	Environmental testing
29.020	Elektrotehnika na splošno	Electrical engineering in general

oSIST prEN IEC 60068-3-6:2024 **en**

104/1022/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:	
IEC 60068-3-6 ED3	
DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
2023-11-03	**2024-01-26**
SUPERSEDES DOCUMENTS:	
104/976/CD, 104/995A/CC	

IEC TC 104 : ENVIRONMENTAL CONDITIONS, CLASSIFICATION AND METHODS OF TEST

SECRETARIAT:	SECRETARY:
Sweden	Mr Henrik Lagerström
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐
	Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY

☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING
Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Recipients of this document are invited to submit, with their comments, notification of any relevant "In Some Countries" clauses to be included should this proposal proceed. Recipients are reminded that the CDV stage is the final stage for submitting ISC clauses. (SEE AC/22/2007 OR NEW GUIDANCE DOC).

TITLE:

Environmental testing - Part 3-6: Supporting documentation and guidance - Confirmation of the performance of temperature/ humidity chambers

PROPOSED STABILITY DATE: 2026

NOTE FROM TC/SC OFFICERS:

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

____

ENVIRONMENTAL TESTING –

Part 3-6: Supporting documentation and guidance – Confirmation of the performance of temperature/humidity chambers

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 itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
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 60068-3-6 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test.

This third edition cancels and replaces the second edition published in 2018. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) The contents of IEC 60068-3-5 and IEC 60068-3-6 are merged into this document due to the significant overlap between the two.
b) Addition of new terms and definitions for temperature and humidity uniformity.
c) Significant editorial re-writing for clarity.
d) Clarification of mandatory versus non-mandatory information.
e) Updates to several figures.

f) New information in bibliography and removal of listings from the normative references section deemed non-mandatory in new edition.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
104/XXX/XXX	104/XXX/XXX

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

The French version of this standard has not been voted upon.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2. Upon publication, the intention of TC104 is to withdraw IEC 60068-3-5.

IEC 60068-3-6 is to be read in conjunction with IEC 60068-3-11:XXXX. A list of all parts in the IEC 60068 series, published under the general title *Environmental testing*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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

INTRODUCTION

IEC 60068 (all parts) contains fundamental information on environmental testing procedures and severities.

The expression "environmental conditioning" or "environmental testing" covers the natural and artificial environments to which components or equipment may be exposed so that an assessment can be made of their performance under conditions of use, transport and storage to which they may be exposed in practice.

Temperature and humidity chambers used for "environmental conditioning" or "environmental testing" are not described in any publication, although the method of maintaining and measuring temperature and/or humidity has a great influence on test results. The physical characteristics of temperature and humidity chambers can also influence test results.

The goal of this document is to provide methods for measuring the performance characteristics of temperature and humidity chambers. This process can be useful for test specifiers and chamber users, and it can provide standardized methods for chamber manufacturers to specify chamber performance.

ENVIRONMENTAL TESTING –

Part 3-6: Supporting documentation and guidance – Confirmation of the performance of temperature and humidity chambers

1 Scope

This part of IEC 60068 provides a standardized method of establishing whether temperature as well as temperature and humidity chambers, without specimens, are able to achieve the requirements of the relevant climatic test procedures of IEC 60068-2.

This document is intended for users when conducting regular chamber performance monitoring.

Guidance on establishing variations and uncertainties of the climatic conditions within environmental test chambers are provided in IEC 60068-3-11. The guidance of that document is intended to be used with an empty climatic test chamber, a chamber containing a test load, or a chamber contain a test specimen undergoing testing. The guidance is particularly applicable when the specimen or test load is large in comparison to the chamber working space, is heat-dissipating or influences the airflow within the chamber.

When considering temperature only chambers, the passages in this document related to humidity do not need to be applied.

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.

IEC 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60068-2 (all parts), *Environmental testing – Part 2: Tests*

IEC 60068-3-7, *Environmental testing – Part 3-7: Supporting documentation and guidance – Measurements in temperature chambers for tests A and B (with load)*

3 Terms and definitions

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

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
temperature chamber
enclosure or space in some parts of which the temperature conditions, specified in IEC 60068-2 (all parts), can be achieved

3.2
temperature/humidity chamber
enclosure or space in some parts of which the temperature and humidity conditions specified in IEC 60068-2 (all parts) can be achieved

Note 1 to entry: All temperature/humidity chambers can be considered as temperature chambers when humidity conditions are not specified.

3.3
absolute humidity
mass of water vapour present in a unit volume of moist air

Note 1 to entry: Typical units of measure are g/m^3.
Note 2 to entry Unless otherwise specified, "humidity" is relative humidity (RH).

3.4
dewpoint
T_d
temperature at which the saturation vapour pressure over water is equal to the partial pressure of the water vapour in the air

3.5
saturation vapour pressure
maximum possible pressure exerted by a water vapour in equilibrium with its solid or liquid phase, such that any increase will initiate within the vapour a change to a more condensed state

3.6
partial vapour pressure
contribution of water vapour in a given volume of air at a constant pressure and temperature of the atmosphere

3.7
relative humidity
RH
ratio of the partial vapour pressure, divided by the saturation vapour pressure of a given volume of air at a constant temperature, expressed as percentage

Note 1 to entry: The most popular method to express the water vapour content in air is relative humidity.
Note 2 to entry Unless otherwise specified, "humidity" is relative humidity (RH).

3.8
climatogram
graphical display of combined temperature and relative humidity conditions

Note 1 to entry: These are sometimes used to define the achievable operating parameters of a chamber.

3.9

temperature setpoint
desired temperature as set by the chamber controls

3.10
achieved temperature
temperature at the centre of the working space when the chamber has reached temperature stabilization