

SLOVENSKI STANDARD

SIST EN 60068-2-67:2001

01-september-2001

Environmental testing - Part 2: Tests - Test Cy: Damp heat, steady state, accelerated test primarily intended for components

Environmental testing -- Part 2: Tests - Test Cy: Damp heat, steady state, accelerated test primarily intended for components

Umweltprüfungen -- Teil 2: Prüfungen - Prüfung Cy: Feuchte Wärme, konstant, beschleunigte Prüfung; vorzugsweise für Bauelemente

Essais d'environnement -- Partie 2: Essais - Essai Cy: Essai continu de chaleur humide, essai accéléré applicable en premier lieu aux composants

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Ta slovenski standard je istoveten z: EN 60068-2-67:1996

ICS:

19.040

Preskušanje v zvezi z
okoljem

Environmental testing

SIST EN 60068-2-67:2001

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60068-2-67

January 1996

ICS 19.040

Descriptors: Electricity, component, electrotechnical product, environment testing, damp heat steady state, accelerated test

English version

Environmental testing - Part 2: Tests
Test Cy: Damp heat, steady state, accelerated test
primarily intended for components
(IEC 68-2-67:1995)

Essais d'environnement
Partie 2: Essais
Essai Cy: Essai continu de chaleur
humide, essai accéléré applicable en
premier lieu aux composants
(CEI 68-2-67:1995)

Umweltprüfungen - Teil 2: Prüfungen
Prüfung Cy: Feuchte Wärme, konstant,
beschleunigte Prüfung, vorzugsweise für
Bauelemente
(IEC 68-2-67:1995)

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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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and 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 50B/360/DIS, future edition 1 of IEC 68-2-67, prepared by SC 50B, Climatic tests, of IEC TC 50, Environmental testing, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60068-2-67 on 1995-11-28.

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) 1996-09-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 1996-09-01

Endorsement notice

The text of the International Standard IEC 68-2-67:1995 was approved by CENELEC as a European Standard without any modification.

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Essais d'environnement –

Partie 2:

Essais – Essai Cy: Essai continu
de chaleur humide, essai accéléré applicable
en premier lieu aux composants

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Part 2:

Tests – Test Cy: Damp heat, steady state,
accelerated test primarily intended for components

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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CONTENTS

	Page
FOREWORD.....	5
Clause	
1 Scope.....	7
2 General description.....	7
3 Description of test apparatus.....	7
4 Severities	9
5 Pre-conditioning.....	11
6 Initial measurements.....	11
7 Testing	11
8 Intermediate measurements.....	13
9 Recovery.....	13
10 Final measurements.....	13
11 Information to be given in the relevant specification.....	13
ANNEXES	
A Physical significance of the test	15
B Test apparatus and handling.....	17

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ENVIRONMENTAL TESTING –

**Part 2: Tests – Test Cy: Damp heat, steady state,
accelerated test primarily intended for components**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
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International Standard IEC 68-2-67 has been prepared by sub-committee 50B: Climatic tests, of IEC technical committee 50: Environmental testing.

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

FDIS	Report on voting
50B/360/FDIS	50B/373/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.

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

IEC 68 consists of the following parts, under the general title: Environmental testing.

- Part 1: General and guidance
- Part 2: Tests
- Part 3: Background information
- Part 4: Information for specification writers – Test summaries
- Part 5: Guide to drafting of test methods

Annexes A and B are for information only.

ENVIRONMENTAL TESTING –

Part 2: Tests – Test Cy: Damp heat, steady state, accelerated test primarily intended for components

1 Scope

This International Standard provides a standard test procedure for the purpose of evaluating, in an accelerated manner, the resistance of small electrotechnical products, primarily non-hermetically sealed components, to the deteriorative effect of damp heat.

The test is not intended to evaluate external effects such as corrosion and deformation.

2 General description

In this test the specimen is subjected to very high levels of unsaturated damp heat for a relatively long period.

Electrical bias is usually applied.

The test provides a number of preferred durations at a relative humidity of 85 % and a temperature of 85 °C.

In the case of plastic encapsulated components degradation results from absorption of water-vapour by the plastic and penetration of moisture along terminals.

3 Description of test apparatus

3.1 The test chamber

The chamber shall be so constructed that:

- it can produce the temperature and relative humidity given in table 1 for a minimum period of 2 000 h without interruption;
- it is capable of providing controlled conditions of temperature and relative humidity during testing, and the ramp-up to and ramp-down from specified test conditions;
- the temperature and humidity of the chamber can be monitored by means of sensing devices located in the working space and/or other areas giving the same results;
- any water shall be continuously drained from the working space and not re-used;
- condensed water is not allowed to fall on the specimen;
- the materials used in the construction shall not cause any significant corrosion of the specimen, or degradation of the quality of the humidifying water (see clause B.1).

The temperature tolerance of ± 2 °C is intended to take account of absolute errors in the measurement, fluctuations of the chamber temperature at any point and variations between any two points within the working space.

However, in order to maintain the relative humidity within the specified tolerance of $\pm 5\%$, it is necessary to keep the difference between any two points in the working space (at any instant) within narrower limits.

The specified humidity tolerance will be exceeded if such temperature differences exceed $1,5\text{ }^{\circ}\text{C}$. It is also necessary to restrict the short-term temperature fluctuations due to cycling of the chamber heater to a similar value.

The specimen should not significantly impede the air flow.

Condensation shall not be allowed to form on the specimen at any time during the test.

3.2 The humidifying water

Distilled or deionised water shall be used. The water shall have a resistivity of not less than $0,5\text{ M}\Omega\text{cm}$ at $23\text{ }^{\circ}\text{C}$. The pH value shall be between 6,0 and 7,2 at $23\text{ }^{\circ}\text{C}$.

Before the water is placed in the humidifier, all internal parts of the chamber shall be cleaned. Guidance on cleaning is given in clause B.3.

The humidifier and/or test chamber shall be purged of all water after each test.

4 Severities

The test severity, defined by the duration, shall be defined in the relevant specification. Unless otherwise specified, one of the durations given in table 1 shall be used.

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Table 1 – Severities

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Temperature °C 1)	Relative humidity % 2)	Duration 3) 4) h			
		I	II	III	IV
85	85	168	504	1 000	2 000
1) Tolerance for temperature:		± 2 °C in the chamber working space			
2) Tolerance for relative humidity:		± 5 %			
3) Tolerance for duration:		+5 0 %			
4) Definition of duration:		see 7.4.2			
<p>NOTE – It is not recommended that a test should be restarted; however if it is required to subject the specimen to a longer duration than 2 000 h then the test shall be recommenced in accordance with the requirements of clause 7. The test shall be recommenced within 96 h of the end of the ramp-down period of the previous test.</p> <p>During the interval between the tests the specimen shall be held under standard atmospheric conditions for measurement and tests, unless otherwise specified in the relevant specification.</p>					