SLOVENSKI STANDARD

SIST EN 60068-2-69:2008

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Okoljski preskusi - 2. del: Preskusi - Preskus Te: Preskus spajkanja elektronskih komponent za povrġinsko montaġo (SMD) z metodo za doloļ anje omoļ ljivosti (IEC 60068-2-69:2007)

Environmental testing - Part 2: Tests - Test Te: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method

Umgebungseinflüsse - Teil 2-69: Prüfungen - Prüfung Te: Prüfung der Lötbarkeit von Bauelementen der Elektronik für Oberflächenmontage (SMD) mit der Benetzungswaage

Essais d'environnement - Partie 2-69: Essais - Essai Te: Essai de brasabilité des composants électroniques pour les composants pour montage en surface (CMS) par la méthode de la balance de mouillage

Ta slovenski standard je istoveten z: **EN 60068-2-69:2007**

ICS:

19.040

31.190

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60068-2-69

June 2007

ICS 19.040; 31.190

Supersedes EN 60068-2-69:1996

English version

Environmental testing - Part 2-69: Tests - Test Te: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method

(IEC 60068-2-69:2007)

Essais d'environnement - Partie 2-69: Essais - Essai Te: Essai de brasabilité des composants électroniques pour les composants pour montage en surface (CMS) par la méthode de la balance de mouillage (CEI 60068-2-69:2007)

Umgebungseinflüsse - Teil 2-69: Prüfungen - Prüfung Te: Prüfung der Lötbarkeit von Bauelementen der Elektronik für Oberflächenmontage (SMD) mit der Benetzungswaage (IEC 60068-2-69:2007)

This European Standard was approved by CENELEC on 2007-06-01. 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

Ref. No. EN 60068-2-69:2007 E

Foreword

The text of document 91/648/FDIS, future edition 2 of IEC 60068-2-69, prepared by IEC TC 91, Electronics assembly technology, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60068-2-69 on 2007-06-01.

This European Standard supersedes EN 60068-2-69:1996.

The main changes from EN 60068-2-69:1996 are as follows:

– inclusion of lead-free alloy test conditions;

– inclusion of new fluxes for testing, reflecting development of fluxes that have happened in the industry in the past 20 years;

– inclusion of new component types, and updating test parameters for the whole component list.

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)	2008-03-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2010-06-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60068-2-69:2007 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60068-2-44	NOTE	Harmonized as EN 60068-2-44:1995 (not modified).
IEC 61190-1-1	NOTE	Harmonized as EN 61190-1-1:2002 (not modified).
ISO 9453	NOTE	Harmonized as EN ISO 9453:2006 (not modified).
ISO 9454-1	NOTE	Harmonized as EN 29454-1:1993 (not modified).

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.

Publication	Year	Title	EN/HD	Year
IEC 60068-1	-[1)]	Environmental testing - Part 1: General and guidance	EN 60068-1	1994[2)]
IEC 60068-2-20 + A2	1979 1987	Environmental testing - Part 2: Tests - Test T: Soldering	HD 323.2.20 S3	1988
IEC 60068-2-54	2006	Environmental testing - Part 2-54: Tests - Test Ta: Solderability testing of electronic components by the wetting balance method	EN 60068-2-54	2006
IEC 61190-1-3	2002	Attachment materials for electronic assembly - Part 1-3: Requirements for electronic grade solder alloys and fluxed and non-fluxed solid solders for electronic soldering applications	EN 61190-1-3	2002
ISO 683	Series	Heat-treatable steels, alloy steels and free-cutting steels	-	-
ISO 6362	Series	Wrought aluminium and aluminium alloy extruded rods/bars, tubes and profiles	-	-

[1)] Undated reference.

[2)] Valid edition at date of issue.

INTERNATIONAL STANDARD

IEC 60068-2-69

Second edition
2007-05

Environmental testing –

Part 2-69:
Tests – Test Te: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method

Commission Electrotechnique Internationale
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For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ENVIRONMENTAL TESTING –

Part 2-69: Tests – Test Te: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method

FOREWORD

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International Standard IEC 60068-2-69 has been prepared by IEC technical committee 91: Electronics assembly technology.

This second edition cancels and replaces the first edition published in 1995 and constitutes a technical revision. The main changes from the previous edition are as follows:

– Inclusion of lead-free alloy test conditions;
– Inclusion of new fluxes for testing, reflecting development of fluxes that have happened in the industry in the past 20 years;
– Inclusion of new component types, and updating test parameters for the whole component list.

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

FDIS	Report on voting
91/648/FDIS	91/680/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.

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.

A bilingual version of this publication may be issued at a later date.

ENVIRONMENTAL TESTING –

Part 2-69: Tests – Test Te: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method

1 Scope

This part of IEC 60068 outlines test Te, solder bath wetting balance method and solder globule wetting balance method, applicable for surface mounting devices. These methods determine quantitatively the solderability of terminations on surface mounting devices. IEC 60068-2-54 is also available for surface mounting devices and should be consulted if applicable.

The procedures describe the solder bath wetting balance method and the solder globule wetting balance method and are both applicable to components with metallic terminations and metallized solder pads.

This standard provides the standard procedures for solder alloys containing lead (Pb) and for lead-free solder alloys.

2 Normative references

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.

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

IEC 60068-2-20:1979, *Basic environmental testing procedures – Part 2: Tests – Test T: Soldering*
Amendment 2 (1987)

IEC 60068-2-54:2006, *Environmental testing – Part 2-54: Tests – Test Ta: Solderability testing of electronic components by the wetting balance method*

IEC 61190-1-3:2002, *Attachment materials for electronic assemblies – Part 1-3: Requirements for electronic grade solder alloys and fluxed/non-fluxed solid solder for electronic soldering applications*

ISO 683 (all parts), *Heat-treatable steels, alloy steels and free-cutting steels*

ISO 6362 (all parts), *Wrought aluminium and aluminium alloy extruded rods/bars, tubes and profiles*

3 Terms and definitions

For the purpose of this document, the terms and definitions as defined in IEC 60068-1 and IEC 60068-2-20 apply.

4 General description of the method

After applying the liquid flux to the component termination and mounting the component in a suitable holder, the specimen is suspended from a sensitive balance. The component termination is brought into contact with the cleaned surface of a solder bath or the apex of a solder globule, and immersed to the prescribed depth.

The resultant forces of buoyancy and surface tension acting upon the immersed termination are detected by a transducer and converted to a signal which is continuously monitored as a function of time, and recorded on a high speed chart recorder or displayed on a computer screen.

The wetting speed and the extent of wetting are derived from the force against time curve.

5 Description of the test apparatus

A diagram showing a suitable arrangement for the test apparatus is shown in Figure 1. The specimen is suspended from a sensitive balance and a mechanism used to either raise the solder to meet the specimen or lower the specimen into the solder.

After conditioning, the transducer signal is passed to either a chart recorder or a computer, where the force against time curve may be displayed and analysed.

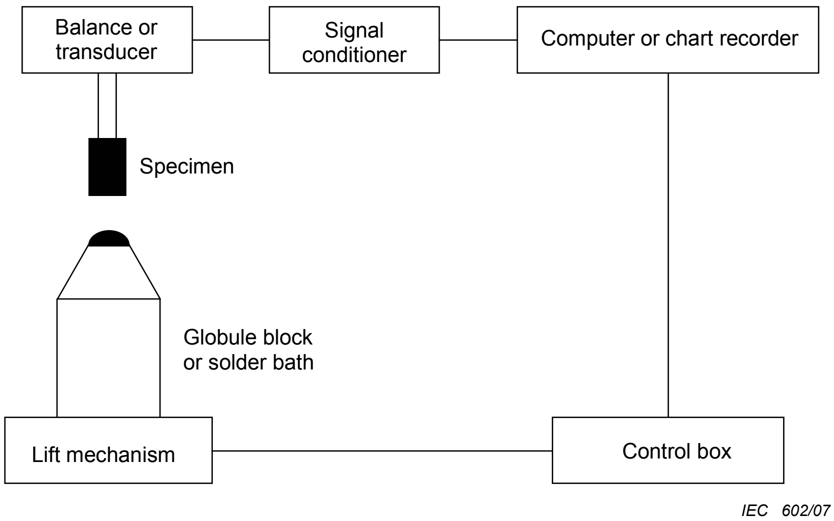

Figure 1 – Test apparatus

Any other system capable of measuring the vertical forces acting on a specimen is admissible, providing that the system has the characteristics given in A.1, and the solder bath and globule support block meet the requirements of A.2 and A.3 respectively.