

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

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

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 60068-2-69:2007 sisaldab Euroopa standardi EN 60068-2-69:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 27.08.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 60068-2-69:2007 consists of the English text of the European standard EN 60068-2-69:2007.</p> <p>This document is endorsed on 27.08.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> 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.</p>	<p><b>Scope:</b> 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.</p>
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**ICS** 19.040, 31.190

**Võtmesõnad:** electric, electronic engineering, electronic equ, electronic equipment and components, electrotechnical products, environmental testing, materials testing, methods, solderability, solderability testing, surface mounting, test equipment, testing, wetting balances

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**

## 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.

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## 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).

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## 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	- <sup>1)</sup>	Environmental testing - Part 1: General and guidance	EN 60068-1	1994 <sup>2)</sup>
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	-	-

<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

**INTERNATIONAL  
STANDARD**

**IEC  
60068-2-69**

Second edition  
2007-05

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**Environmental testing –**

**Part 2-69:**

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



Reference number  
IEC 60068-2-69:2007(E)



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CH-1211 Geneva 20  
Switzerland  
Email: [inmail@iec.ch](mailto:inmail@iec.ch)  
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60068-2-69**

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**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  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

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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

- 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.
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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.

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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*

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