

**Environmental testing - Part 2-83: Tests - Test Tf:
Solderability testing of electronic components for
surface mounting devices (SMD) by the wetting balance
method using solder paste**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 60068-2-83:2011 sisaldab Euroopa standardi EN 60068-2-83:2011 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 31.10.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 14.10.2011.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 60068-2-83:2011 consists of the English text of the European standard EN 60068-2-83:2011.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 31.10.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 14.10.2011.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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ICS 19.040, 31.190

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**Environmental testing -
Part 2-83: Tests -
Test Tf: Solderability testing of electronic components for surface
mounting devices (SMD) by the wetting balance method using solder
paste
(IEC 60068-2-83:2011)**

Essais d'environnement -
Partie 2-83: Essais -
Essais Tf: Essai de brasabilité des
composants électroniques pour les
composants pour montage en surface
(CMS) par la méthode de la balance de
mouillage utilisant de la pâte à braser
(CEI 60068-2-83:2011)

Umweltprüfungen -
Teil 2-83: Prüfungen -
Prüfung Tf: Prüfung der Lötbarkeit von
Bauelementen der Elektronik für
Oberflächenmontage (SMD) mit der
Benetzungswaage unter Verwendung von
Lotpaste
(IEC 60068-2-83:2011)

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 91/975/FDIS, future edition 1 of IEC 60068-2-83, prepared by IEC/TC 91 "Electronics assembly technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60068-2-83:2011.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2012-07-12
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2014-10-12

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60068-2-83:2011 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 60068-2-69 | NOTE Harmonized as EN 60068-2-69. |
| IEC 61189-5 | NOTE Harmonized as EN 61189-5. |

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	-	Environmental testing - Part 1: General and guidance	EN 60068-1	-
IEC 60068-2-20	2008	Environmental testing - Part 2-20: Tests - Test T: Test methods for solderability and resistance to soldering heat of devices with leads	EN 60068-2-20	2008
IEC 60068-2-58	-	Environmental testing - Part 2-58: Tests - Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)	EN 60068-2-58	-
IEC 60194	-	Printed board design, manufacture and assembly - Terms and definitions	EN 60194	-
IEC 61190-1-3	-	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	-

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INTRODUCTION

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents as indicated below.

IEC takes no position concerning the evidence, validity and scope of patent rights.

The holders of the patent rights have assured the IEC that they are willing to negotiate licences either free of charge or under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holders of these patent rights are registered with IEC. Information may be obtained as indicated below.

- a) EU patent 0920488.4 “Synchronous test method for assessing soldering pastes”¹
Gen3 Systems LTD
Unit B2
Armstrong Mall
Farnborough GU14 0NR
United Kingdom
- b) JP Patent 2630712 “Testing method of characteristics of solder paste and the equipment for the test”
Malcom Co., Ltd
4-15-10 Honmachi, Shibuya-ku
Tokyo, 151-0071
Japan
- c) Patent JP 3789041 “Solderability measuring apparatus”
Patent JP 3552061 “Solderability tester and solderability test method”
Patent JP 3498100 “Method and device for testing solderability and microcrucible for testing”
Patent JP 3153884 “Measuring device for soldering performance of cream solder”
Tarutin Kester Co., Ltd.
2-20-11 Yokokawa,
Sumida-ku
Tokyo, 130-0003
Japan
- d) Sony Corporation
1-7-1 Konan Minato-ku
Tokyo 108-0075
Japan

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¹ Status of patent: Pending.

ISO (www.iso.org/patents) and IEC (<http://patents.iec.ch>) maintain on-line data bases of patents relevant to their standards. Users are encouraged to consult the data bases for the most up to date information concerning patents.

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ENVIRONMENTAL TESTING –

Part 2-83: Tests – Test Tf: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method using solder paste

1 Scope

This part of IEC 60068 provides methods for comparative investigation of the wettability of the metallic terminations or metallized terminations of SMDs with solder pastes.

Data obtained by these methods are not intended to be used as absolute quantitative data for pass – fail purposes.

NOTE Different solderability test methods for SMD are described in IEC 60068-2-58 and IEC 60068-2-69. IEC 60068-2-58 prescribes visual evaluation using solder bath and reflow method, IEC 60068-2-69 prescribes wetting balance evaluation using solder bath and solder globule method.

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 60068-2-20:2008, *Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads*

IEC 60068-2-58, *Environmental testing – Part 2-58: Tests – Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)*

IEC 60194, *Printed board design, manufacture and assembly – Terms and definitions*

IEC 61190-1-3, *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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60068-1, IEC 60068-2-20:2008, IEC 60068-2-58, IEC 60194, and IEC 61190-1-3 and the following apply.

3.1

wettability

ease with which a metal or metal alloy can be wetted by molten solder