BS EN 60068-2-69:2017+A1:2019
Incorporating corrigendum January 2018

BSI Standards Publication

Environmental testing

Part 2-69 – Tests – Test Te/Tc – Solderability testing of electronic components and printed boards by the wetting balance (force measurement) method

National foreword

This British Standard is the UK implementation of EN 60068-2-69:2017+A1:2019. It is identical to IEC 60068-2-69:2017, incorporating corrigendum January 2018 and amendment 1:2019. It supersedes BS EN 60068-2-69:2017, which is withdrawn.

IEC corrigendum January 2018 corrects:

- Table 2
- Clause 8
- Clause 10
- Annex B
- Annex D

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment A1 is indicated by A1〉 〈A1.

The UK participation in its preparation was entrusted to Technical Committee EPL/501, Electronic Assembly Technology.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2017.

Amendments/corrigenda issued since publication

Date	Text affected
31 May 2018	Implementation of IEC corrigendum January 2018
30 September 2019	Implementation of IEC amendment 1:2019 with CENELEC endorsement A1:2019

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60068-2-69:2017+A1

August 2019

ICS 19.040; 31.190

English Version

Environmental testing - Part 2-69: Tests - Test Te/Tc: Solderability testing of electronic components and printed boards by the wetting balance (force measurement) method (IEC 60068-2-69:2017)

Essais d'environnement - Partie 2-69: Essais - Essai Te/Tc: Essai de brasabilité des composants électroniques et cartes imprimées par la méthode de la balance de mouillage (mesure de la force)
(IEC 60068-2-69:2017)

Umgebungseinflüsse - Teil 2-69: Prüfungen - Prüfung Te/TC: Prüfung der Lötbarkeit von Bauelementen der Elektronik und Leiterplatten mit der Benetzungswaage (Kraftmessung)
(IEC 60068-2-69:2017)

This European Standard was approved by CENELEC on 2017-04-11. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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CENELEC

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 91/1405/FDIS, future edition 3 of IEC 60068-2-69, prepared by IEC/TC 91 "Electronics assembly technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60068-2-69:2017.

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)	2018-01-11
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2020-04-11

This document supersedes EN 60068-2-69:2007 and EN 60068-2-54:2006.

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

Endorsement notice

The text of the International Standard IEC 60068-2-69:2017 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 60068-3-13:2016	NOTE	Harmonized as EN 60068-3-13:2016 (not modified).
IEC 61190-1-1:2002	NOTE	Harmonized as EN 61190-1-1:2002 (not modified).
ISO 9453:2014	NOTE	Harmonized as EN ISO 9453:2014 (not modified).

Foreword to amendment A1

The text of document 91/1566/FDIS, future IEC 60068-2-69/A1, prepared by IEC/TC 91 "Electronics assembly technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60068-2-69:2017/A1:2019.

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)	2020-04-24
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2022-07-24

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The text of the International Standard IEC 60068-2-69:2017/A1:2019 was approved by CENELEC as a European Standard without any modification.

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FOREWORD

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

This third edition constitutes a technical revision.

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

- integration of IEC 60068-2-54;
- inclusion of tests of printed boards;
- inclusion of new component types, and updating test parameters for the whole component list;
- inclusion of a new gauge R & R test protocol to ensure that the respective wetting balance equipment is correctly calibrated.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all 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 the base publication and its amendment will remain unchanged until the stability 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

ENVIRONMENTAL TESTING –

Part 2-69: Tests – Test Te/Tc: Solderability testing of electronic components and printed boards by the wetting balance (force measurement) method

1 Scope

This part of IEC 60068 outlines test Te/Tc, the solder bath wetting balance method and the solder globule wetting balance method to determine, quantitatively, the solderability of the terminations. Data obtained by these methods are not intended to be used as absolute quantitative data for pass–fail purposes.

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

This document provides the measurement procedures for solder alloys both with and without lead (Pb).

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 60068-2-2, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

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 60068-2-66, *Environmental testing − Part 2: Test methods − Test Cx: Damp heat, steady state (unsaturated pressurized vapour)*

IEC 61190-1-3:2007, *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*
IEC 61190-1-3:2007/AMD1:2010

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

ISO 6362 (all parts), *Wrought aluminium and aluminium alloys – Extruded rods/bars, tubes and profiles*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60068-1 and IEC 60068-2-20 apply.