

BS EN 60068-3-13:2016



BSI Standards Publication

Environmental testing

Part 3-13: Supporting documentation
and guidance on Test T — Soldering

National foreword

This British Standard is the UK implementation of EN 60068-3-13:2016. It is identical to IEC 60068-3-13:2016. It supersedes BS EN 60068-2-44:1995 which is withdrawn.

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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EUROPEAN STANDARD

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ICS 19.040

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English Version

**Environmental testing - Part 3-13: Supporting documentation
and guidance on Test T - Soldering
(IEC 60068-3-13:2016)**

Essais d'environnement - Partie 3-13: Documentation
d'accompagnement et guide sur les essais T - Brasage
(IEC 60068-3-13:2016)

Umweltprüfungen - Teil 3-13: Ergänzende Unterlagen und
Anleitung zur Prüfung T: Löten
(IEC 60068-3-13:2016)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

The text of document 91/1345/FDIS, future edition 1 of IEC 60068-3-13, prepared by IEC/TC 91 "Electronics assembly technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60068-3-13:2016.

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) 2017-03-17
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-06-17

This document supersedes EN 60068-2-44:1995.

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 60068-3-13:2016 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 Series	NOTE	Harmonized as EN 60068-2 Series.
IEC 60749-20	NOTE	Harmonized as EN 60749-20.
IEC 61190-1-1	NOTE	Harmonized as EN 61190-1-1.
IEC 61191 Series	NOTE	Harmonized as EN 61191 Series.
IEC 61192 Series	NOTE	Harmonized as EN 61192 Series.
IEC 61760-4	NOTE	Harmonized as EN 61760-4.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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 60068-2-69	-	Environmental testing - Part 2: Tests - Test Te: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method	EN 60068-2-69	-
IEC 60068-2-83	-	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	EN 60068-2-83	-
IEC 61760-1	-	Surface mounting technology - Part 1: Standard method for the specification of surface mounting components (SMDs)	EN 61760-1	-
IEC 62137-3	-	Electronics assembly technology - Part 3: Selection guidance of environmental and endurance test methods for solder joints	EN 62137-3	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ENVIRONMENTAL TESTING –

Part 3-13: Supporting documentation and guidance on Test T – Soldering

FOREWORD

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International Standard IEC 60068-3-13 has been prepared by IEC technical committee 91: Electronics assembly technology.

This first edition cancels and replaces IEC 60068-2-44:1995 and constitutes a technical revision.

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

- information for lead-free solders are added;
- technical update and restructuring.

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

FDIS	Report on voting
91/1345/FDIS	91/1356/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.

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

A list of all parts in the IEC 60068 series, published 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 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.

ENVIRONMENTAL TESTING –

Part 3-13: Supporting documentation and guidance on Test T – Soldering

1 Scope

This part of IEC 60068 provides background information and guidance for writers and users of specifications for electric and electronic components, containing references to the test standards IEC 60068-2-20, IEC 60068-2-58, IEC 60068-2-69, IEC 60068-2-83, and to IEC 61760-1, which defines requirements to the specification of surface mounting components.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-20:2008, *Environmental testing – Part 2: 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 60068-2-69, *Environmental testing – Part 2-69: Tests – Test Te: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method¹*

IEC 60068-2-83, *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 61760-1, *Surface mounting technology – Part 1: Standard method for the specification of surface mounting components (SMDs)*

IEC 62137-3, *Electronics assembly technology – Part 3: Selection guidance of environmental and endurance test methods for solder joints*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document the following terms and definitions apply.

3.1.1

solderability

ability of the lead, termination or electrode of a component to be wetted by solder at the temperature of the termination or electrode, which is assumed to be the lowest temperature in the soldering process within the applicable temperature range of the solder alloy

¹ A new edition (third edition) is currently under consideration.