PRIVATE CIRCULATION
EPL/501_17_0001
For comment/vote - Action Due Date: 2017/02/20

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Our Ref: EPL/501

Date: 4 January 2017

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Dear Member

PARALLEL VOTING IN IEC/CENELEC (CDV/prEN)

DEFAULT UK VOTE: ABSTAIN
REPLY TO CSC@BSIGROUP.COM BEFORE 20 FEBRUARY 2017

Please find attached:

17/30347779DC - **91/1402/CDV** - Amendment 1 to IEC 60068-2-58 Ed.4: 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)

This document is circulated under the new IEC/CENELEC agreement where a CDV is issued for parallel UAP, thereby allowing the FDIS to be missed out if there are no negative votes received.

IEC National Committees have been invited to approve the above document for circulation as a Final Draft International Standard (FDIS) or publication as an international standard. As a member of the responsible BSI committee you are asked to give your opinion on the vote to be returned to IEC. It should be noted that this is the last stage at which any changes to the technical content can be proposed, and if you disagree to the circulation of the draft as a FDIS, state the technical reasons for your disagreement.

CENELEC National Committees are invited to vote and send comments on the prEN and also to request Special National Conditions and to notify A-deviations and any compulsory certification. Please bear in mind that acceptance of a draft CENELEC Standards means agreement in principle to it being the basis of a new British Standard without further change. **Even if the UK votes negative, BSI is required to publish an identical British Standard if the prEN is adopted by CENELEC. Some additional text for the National Foreword explaining the concerns we have will need to be provided by the Committee.**

When submitting comments please ensure that they are entered into the IEC comments template. If you have any queries in how to use the template then please do not hesitate to Contact the Committee Service Centre.

If we do not hear from you by the above date we shall submit a vote of abstention to IEC and CLC, on behalf of the UK.

Yours sincerely

Committee Service Centre

Form 36

DPC: 17 / 30347779 DC

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Latest date for receipt of comments: 20 February 2017

Project No. 2016/02528

Responsible committee: EPL/501 Electronic Assembly Technology

Interested committees:

Title: Draft BS IEC 60068-2-58 Ed4.0 Amd 1 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) Amendment 1

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

i) has any issues related to 3rd party IPR, patent or copyright
ii) affects other national standard(s)
iii) requires additional national guidance or information

WARNING: THIS IS A DRAFT AND MUST NOT BE REGARDED OR USED AS A BRITISH STANDARD. THIS DRAFT IS NOT CURRENT BEYOND 20 February 2017

This draft is issued to allow comments from interested parties; all comments will be given consideration prior to publication. No acknowledgement will normally be sent. **See overleaf for information on the submission of comments.**

Further copies of this draft may be purchased from BSI Shop **http://shop.bsigroup.com** or from BSI Customer Services, Tel: + 44(0) 20 8996 9001 or email cservices@bsigroup.com. British, International and foreign standards are also available from BSI Customer Services.

Information on the co-operating organizations represented on the committees referenced above may be obtained from **http://standardsdevelopment.bsigroup.com**

Responsible Committee Secretary: **Committee Service Centre (BSI)**
Direct tel: **020 8996 7009**
E-mail: **csc@bsigroup.com**

Introduction

This draft standard is based on European discussions in which the UK took an active part. Your comments on this draft are welcome and will assist in the preparation of the consequent British Standard. Comment is particularly welcome on national legislative or similar deviations that may be necessary.

Even if this draft standard is not approved by the UK, if it receives the necessary support in Europe, the UK will be obliged to publish the official English Language text unchanged as a British Standard and to withdraw any conflicting standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with reasons) or positive vote on this draft.

Submission of Comments

- The guidance given below is intended to ensure that all comments receive efficient and appropriate attention by the responsible BSI committee. **Annotated drafts are not acceptable and will be rejected.**

- All comments must be submitted, preferably electronically, to the Responsible Committee Secretary at the address given on the front cover. Comments should be compatible with version 6.0 or version 97 of Microsoft Word for Windows, if possible; otherwise comments in ASCII text format are acceptable. **Any comments not submitted electronically should still adhere to these format requirements.**

- All comments submitted should be presented as given in the example below. Further information on submitting comments and how to obtain a blank electronic version of a comment form are available from the BSI website at: **http://drafts.bsigroup.com/**

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: **ISO/DIS xxxx**

1	2	(3)	4	5	(6)	(7)
MB	**Clause No./ Subclause No./Annex** (e.g. 3.1)	**Paragraph/ Figure/ Table/Note**	**Type of comment**	**Commend (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations on each comment submitted**
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '…so that the mains connector to which no connection…'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

91/1402/CDV

COMMITTEE DRAFT FOR VOTE (CDV)
PROJET DE COMITÉ POUR VOTE (CDV)

	Project number Numéro de projet **IEC 60068-2-58 Am.1 Ed.4**	
	IEC/TC or SC: TC 91 CEI/CE ou SC:	Secretariat / Secrétariat Japan
☒ Submitted for parallel voting in CENELEC Soumis au vote parallèle au CENELEC	Date of circulation Date de diffusion 2016-12-30	Closing date for voting (Voting mandatory for P-members) Date de clôture du vote (Vote obligatoire pour les membres (P)) 2017-03-24
Also of interest to the following committees Intéresse également les comités suivants IEC SC 23J, TC 40, TC 47, SC 47D, SC 48B, TC 51	Supersedes document Remplace le document 91/1389/CD, 91/1401/CC	
Proposed horizontal standard Norme horizontale suggérée ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the TC/SC secretary Les autres CE/SC sont requis d'indiquer leur intérêt, si nécessaire, dans ce CDV à l'intention du secrétaire du CE/SC		
Functions concerned Fonctions concernées ☐ Safety / Sécurité ☐ EMC / CEM ☐ Environment / Environnement ☒ Quality assurance / Assurance qualité		

Title :

Amendment 1 to IEC 60068-2-58 Ed.4: 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)

ATTENTION **VOTE PARALLÈLE** **CEI – CENELEC** L'attention des Comités nationaux de la CEI, membres du CENELEC, est attirée sur le fait que ce projet de comité pour vote (CDV) de Norme internationale est soumis au vote parallèle. Les membres du CENELEC sont invités à voter via le système de vote en ligne du CENELEC	**ATTENTION** **IEC – CENELEC** **PARALLEL VOTING** The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) for an International Standard is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.

FOREWORD

This amendment has been prepared by IEC technical committee 91: Electronics assembly technology.

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

FDIS	Report on voting
XX/XX/FDIS	XX/XX/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website 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.

The National Committees are requested to note that for this document the stability date is 2022

THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT THE PUBLICATION STAGE.

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1 Scope

In 2nd paragraph, replace “the solderability and resistance to soldering heat” *by* the “the solderability, resistance to dissolution of metallization and to soldering heat”

(Current) This standard provides procedures for determining the solderability and resistance to soldering heat of devices in applications using solder alloys, which are eutectic or near eutectic tin lead (Pb), or lead-free alloys

(New) This standard provides procedures for determining the solderability, resistance to dissolution of metallization and resistance to soldering heat of devices in applications using solder alloys, which are eutectic or near eutectic tin lead (Pb), or lead-free alloys.

3.2

resistance to soldering heat

Replace “the highest temperature” *by* “the highest temperature stress”

(Current) ability of the component to withstand the highest temperature in terms of temperature gradient, peak temperature and duration of the soldering process, within applicable temperature range of solder alloy

(New) ability of the component to withstand the highest temperature stress in terms of temperature gradient, peak temperature and duration of the soldering process, within applicable temperature range of solder alloy

6.5.3.4 Solder immersion

Replace the 1st paragraph by the following:

(Current) The specified duration and temperature shall be applied immediately prior to the immersion of the specimen in the solder bath, unless otherwise prescribed by the relevant specification.

(New) If the preheating is prescribed by the relevant specification, the specified duration and temperature shall be applied immediately prior to the immersion of the specimen in the solder bath.

8.5.8 Evaluation

Replace “Clause A.4.” *by* “Clause A.2”

Add the following text at the end.

Note that this test dose not directly accesses the dewetting but access the possibility of the dewetting.

9.3.1.3 Metallic terminations shorter than 6 mm (dimension “d” in Figure 6)

Replace list b), c) and d) by the following:

b) The upper side of the termination (area “b” in Figure 6) :

After the dipping test, the dipped surface shall show visible evidence of being wettable, as indicated by the presence of fresh solder. A homogeneous coating is not necessary here.

c) Non-coated cut edges at the end of the termination and the termination above the lower bend (area “c” in Figure 6):

For these areas (“b”, “c” and “d”), no quality criterion of solder coating is given.

10.2 Solderability

Replace subclause 10.2 by the following:

The following details shall be applied for solderability.

a) Property to be tested *
b) Applicable test method *
c) Condition of preconditioning (if required) *
d) For solder bath method
    1) Selected solder alloy *
    2) Flux type*
    3) Clamping, fluxing and solder immersion *
    4) Preheating *
    5) Attitude to be used
    6) Solder temperature and duration *
e) For reflow method
    1) Solder paste *
    2) Dimensional details of test substrate *
    3) Thickness of solder paste *

4) Amount of solder paste
5) Placement procedure
6) Temperature profile *
7) Temperature measurement point *

f) Removal procedure
g) Cleaning method
h) Recovery conditions
i) Areas of the terminations to be examined *
j) Final inspection requirements and acceptance criteria *

10.3 Resistance to soldering heat, dewetting and resistance to dissolution of metallization

Replace subclause 10.3 by the following:

The following details shall be applied for resistance to soldering heat, dewetting and resistance to dissolution of metallization.

a) Property to be tested *
b) Applicable test method *
c) Condition of preconditioning (if required) *
d) Fort solder bath method
   1) Selected solder alloy*
   2) Flux type *
   3) Clamping, fluxing and solder immersion *
   4) Preheating *
   5) Attitude to be used
   6) Solder temperature and duration *
   7) Number of test cycles if other than 1 cycle (for resistance to soldering heat)*
e) For reflow method
   1) Solder paste (if required)*
   2) Dimensional details of test substrate (for resistance to soldering heat and if required)*
   3) Thickness of solder paste (If required)*
   4) Amount of solder paste (If required)*
   5) Placement procedure (If required)*
   6) Temperature profile *
   7) Temperature measurement point *
   8) Number of test cycles for resistance to soldering heat*
f) Removal procedure
g) Cleaning method
h) Recovery conditions
i) Areas of the terminations to be examined *
j) Final inspection requirements and acceptance criteria *

Annex A Criteria for visual inspection

Replace Annex A by the following:

A.1 Evaluation of wetting

A.1.1 General

In various specifications, a complete or nearly complete coating with solder is often defined by the so-called 95 % requirement. The application of this requirement is often difficult when assessing specimens with metallized terminations or with short metallic terminations, especially when different parts of the termination are distinguished. Nevertheless, the same approach is followed here.

A.1.2 Criteria for wetting

Acceptable when 95 % or more area to be evaluated covered by an ideal solder coating with a dewetting area shall be scattered and not concentrated in one area.

Figure A.1 comprises six examples illustrating the criteria for visual examination.

NOTE To help in the evaluation of wetting, the photographs in Figure A.1 have been reproduced on such a scale that the dimensions are reasonably comparable with the view obtained under a microscope, while ensuring that smaller details are still sufficiently clear.

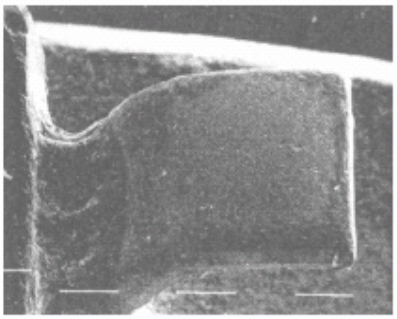
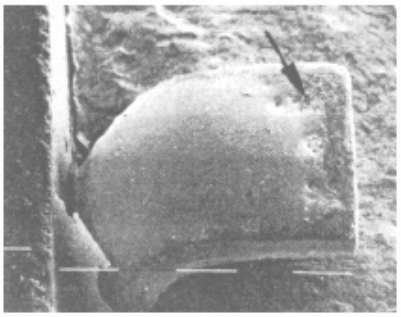
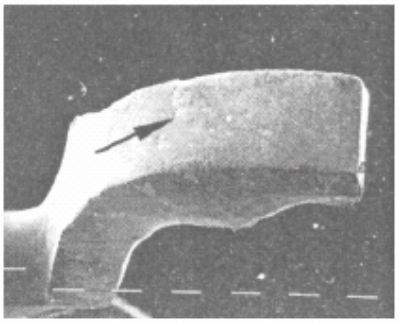
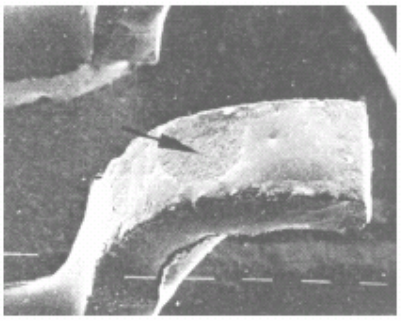
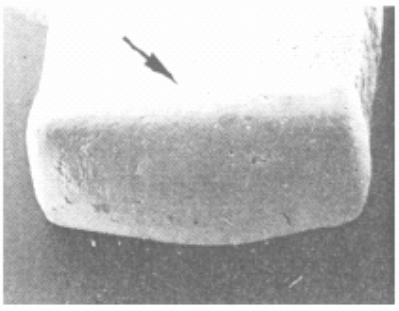
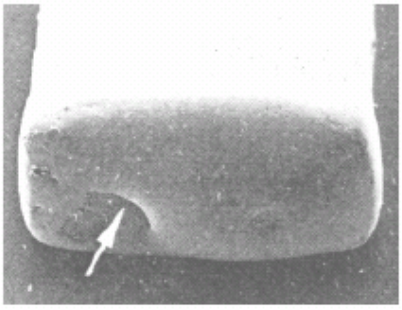
Acceptable	Unacceptable
 **Figure A.1a** Acceptable: ideal coating both on the foot and on the sides; the visible rim is not dewetted because there is no contact angle; the flux residues between body and termination have not been removed.	 **Figure A.1b** Unacceptable: more than 5 % dewetting on the toe; the bend is well coated
 **Figure A.1c** Acceptable: some spots of non-ideal coating on the surface are visible.	 **Figure A.1d** Unacceptable: more than 5 % dewetting of the foot.
 **Figure A.1e** Acceptable: a few very small irregularities are visible.	 **Figure A.1f** Unacceptable: more than 5 % of the area not wetted.
NOTE The arrows indicate imperfections (acceptable or unacceptable).	

Figure A.1 – Evaluation of wetting

A.1.3 Additional criteria for wetting, method 2

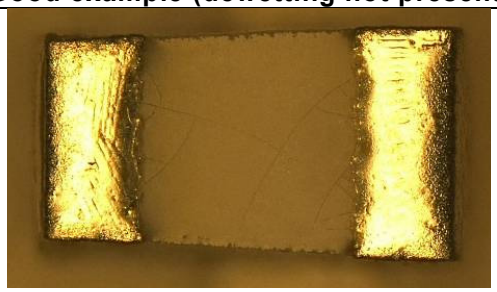
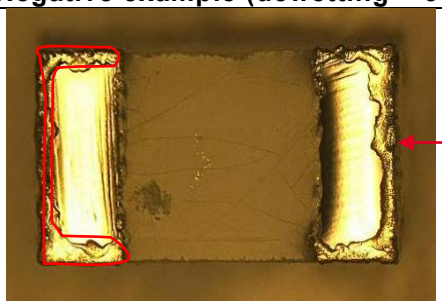
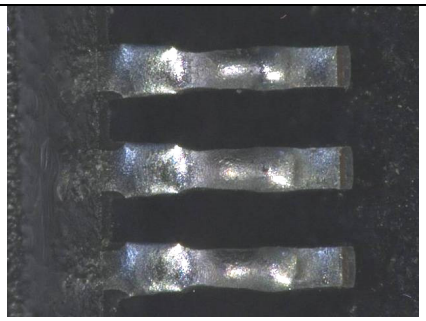
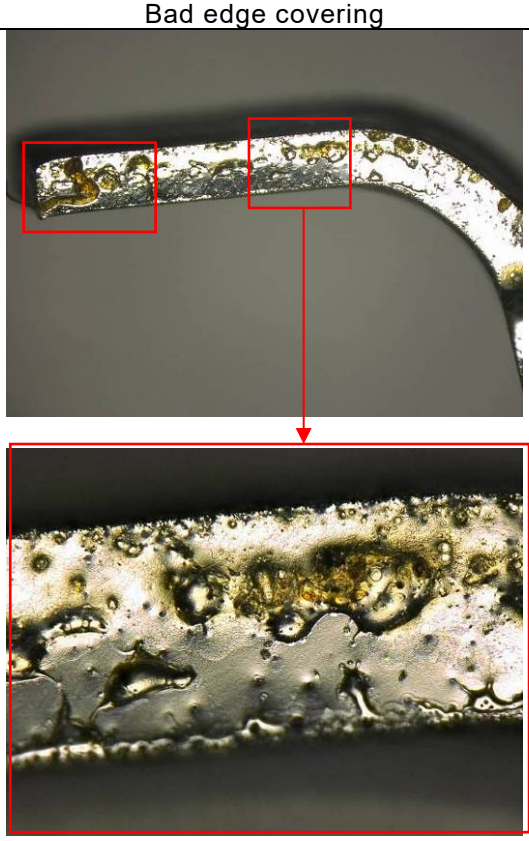
For method 2 (reflow), in addition to A.1.2 the following criteria shall be applied:

– Solder balls at the pins or irregular solder accumulations are not allowed;

– The surface shall be homogenous without irregularities or damages.

A.2 Evaluation of dewetting, method 2

Figure A.2 comprises four examples illustrating the criteria for visual examination.

Good example (dewetting not present)	Negative example (dewetting > 5%)
 **Figure A.2a**:	 **Figure A.2b** Bad edge covering
 **Figure A.2c**	 **Figure A.2d** **“Voids” dewetting**

149 **Figure A.2 – Evaluation of dewetting**

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