

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



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### 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)**

### Essais d'environnement –

**Partie 2-58: Essais – Essai Td: Méthodes d'essai de la soudabilité, résistance de la métallisation à la dissolution et résistance à la chaleur de brasage des composants pour montage en surface (CMS)**



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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 19.040; 31.190

ISBN 978-2-8322-2436-6

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## 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)**

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International Standard IEC 60068-2-58 has been prepared by IEC technical committee 91: Electronics assembly technology.

This fourth edition cancels and replaces the third edition, published in 2004 and constitutes a technical revision.

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

- the addition of Sn-Bi low temperature solder alloy;
- the addition of several reflow test conditions in Table 7 – Resistance to soldering heat – Test conditions and severity, reflow method;
- introduction of reflow test method for Test Td<sub>3</sub>: Dewetting and resistance to dissolution of metallization;

– implementation of guidance for the choice of a test severity in Clause B.3.

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

FDIS	Report on voting
91/1222/FDIS	91/1250/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, published under the general title *Environmental testing*, can be found on the IEC website.

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## 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)

## 1 Scope

This part of IEC 60068 outlines test Td, applicable to surface mounting devices (SMD).

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.

The procedures use either a solder bath or reflow method and are applicable only to specimens or products designed to withstand short term immersion in molten solder or limited exposure to reflow systems.

The solder bath method is applicable to SMDs designed for flow soldering and SMDs designed for reflow soldering when the solder bath (dipping) method is appropriate.

The reflow method is applicable to the SMD designed for reflow soldering, to determine the suitability of SMDs for reflow soldering and when the solder bath (dipping) method is not appropriate.

The objective of this standard is to ensure solderability of component lead or termination. In addition, test methods are provided to ensure that the component body can resist against the heat load to which it is exposed during soldering.

This standard covers tests Td<sub>1</sub>, Td<sub>2</sub> and Td<sub>3</sub> as listed below:

Number of Td	Test	Method
Td <sub>1</sub>	Solderability of terminations	Method 1: Solder bath Method 2: Reflow
Td <sub>2</sub>	Resistance to soldering heat	Method 1: Solder bath Method 2: Reflow
Td <sub>3</sub>	Dewetting and resistance to dissolution of metallization	Method 1: Solder bath Method 2: Reflow

NOTE 1 For specific components other test methods may exist.

NOTE 2 Test Td does not apply to printed wiring board (PWB), see IEC 61189-3.

NOTE 3 Specific through-hole devices (where the device supplier has specifically documented support for reflow soldering) are also included in this standard.

## 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 60068-1, *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*