

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

**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)**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ENVIRONMENTAL TESTING –

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electronic components and printed boards
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International Standard IEC 60068-2-69 has been prepared by IEC technical committee 91: Electronics assembly technology.

This third edition cancels and replaces the second edition published in 2007 as well as the second edition of IEC 60068-2-54 published in 2006 and 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.

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

FDIS	Report on voting
91/1405/FDIS	91/1426/RVD

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

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.

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- withdrawn,
- replaced by a revised edition, or
- amended.

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 61190-1-5:2007, *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 483 (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.