

HY bc`c[ ]Udcj fy]bg\_Y'a cbHUjY!'C\_c`g\_]dfYg\_i gj]b'dfYg\_i gbY'a YlcXY'nU  
Xc`c Ub`Y'nUbYg`j] cgh]gdU^Ub] `gdc`Yj ž]nXYUb] `g`dcj fy]bg\_c`a cbHUjc`!`%) "  
XY.`A Y Ubog\_]dfYg\_i g`lfXbcgh]g`g`lf]ybc`cVfYa Yb]hj ]`c`f197`\*`&%`+!%)`.&\$\$-Ł

Surface mounting technology - Environmental and endurance test methods for surface mount solder joints -- Part 1-5: Mechanical shear fatigue test

Oberflächenmontage-Technik -- Verfahren zur Prüfung auf Umgebungseinflüsse und zur Prüfung der Haltbarkeit von Oberflächen-Lötverbindungen -- Teil 1-5: Prüfung der Ermüdung durch mechanische Scherbeanspruchung

Technologie du montage en surface - Méthodes d'essais d'environnement et d'endurance des joints brasés montés en surface -- Partie 1-5: Essai de fatigue par cisaillement mécanique

**Ta slovenski standard je istoveten z: EN 62137-1-5:2009**

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EUROPEAN STANDARD  
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**EN 62137-1-5**

May 2009

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English version

**Surface mounting technology -  
Environmental and endurance test methods  
for surface mount solder joints -  
Part 1-5: Mechanical shear fatigue test  
(IEC 62137-1-5:2009)**

Technologie du montage en surface -  
Méthodes d'essais d'environnement  
et d'endurance des joints brasés  
montés en surface -  
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par cisaillement mécanique  
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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 91/826/FDIS, future edition 1 of IEC 62137-1-5, prepared by IEC TC 91, Electronics assembly technology, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62137-1-5 on 2009-04-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2010-01-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2012-04-01

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 62137-1-5:2009 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 60068-2-21	NOTE	Harmonized as EN 60068-2-21:2006 (not modified).
IEC 61188-5-8	NOTE	Harmonized as EN 61188-5-8:2008 (not modified).

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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1	- <sup>1)</sup>	Environmental testing - Part 1: General and guidance	EN 60068-1	1994 <sup>2)</sup>
IEC 60194	- <sup>1)</sup>	Printed board design, manufacture and assembly - Terms and definitions	EN 60194	2006 <sup>2)</sup>
IEC 61188-5	Series	Printed boards and printed board assemblies - Design and use - Part 5: Attachment (land/joint) considerations	EN 61188-5	Series
IEC 61190-1-2	2007	Attachment materials for electronic assembly - Part 1-2: Requirements for soldering pastes for high-quality interconnects in electronics assembly	EN 61190-1-2	2007
IEC 61190-1-3	- <sup>1)</sup>	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	EN 61190-1-3	2007 <sup>2)</sup>
IEC 61249-2-7	2002	Materials for printed boards and other interconnecting structures - Part 2-7: Reinforced base materials, clad and unclad - Epoxide woven E-glass laminated sheet of defined flammability (vertical burning test), copper-clad	EN 61249-2-7 + corr. September	2002 2005
IEC 61760-1	- <sup>1)</sup>	Surface mounting technology - Part 1: Standard method for the specification of surface mounting components (SMDs)	EN 61760-1	2006 <sup>2)</sup>

<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

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Edition 1.0 2009-02

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Surface mounting technology – Environmental and endurance test methods for surface mount solder joints – Part 1-5: Mechanical shear fatigue test**

**Technologie du montage en surface – Méthodes d'essais d'environnement et d'endurance des joints brasés montés en surface – Partie 1-5: Essai de fatigue par cisaillement mécanique**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SURFACE MOUNTING TECHNOLOGY –  
ENVIRONMENTAL AND ENDURANCE TEST METHODS  
FOR SURFACE MOUNT SOLDER JOINTS –**

**Part 1-5: Mechanical shear fatigue test**

FOREWORD

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International Standard IEC 62137-1-5 has been prepared by IEC technical committee 91: Electronics assembly technology.

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

FDIS	Report on voting
91/826/FDIS	91/841/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 of the IEC 62137 series, under the general title *Surface mounting technology – Environmental and endurance test methods for surface mount solder joints*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

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## INTRODUCTION

The mechanical properties of lead-free solder joints between leads and lands on a printed wiring board are not the same with tin-lead-containing solder joints, due to their solder compositions. Thus, it becomes important to test the mechanical properties of solder joints of different alloys.

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