

**Surface mounting technology -
Environmental and endurance test
methods for surface mount solder joint
-- Part 1-1: Pull strength test**

Surface mounting technology - Environmental and
endurance test methods for surface mount solder
joint -- Part 1-1: Pull strength test

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 62137-1-1:2007 sisaldab Euroopa standardi EN 62137-1-1:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 23.11.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 62137-1-1:2007 consists of the English text of the European standard EN 62137-1-1:2007.</p> <p>This document is endorsed on 23.11.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: The test method described in this part of IEC 62137 is applicable to gull-wing lead surface mounting components. The method is designed to test and evaluate the endurance of the solder joint between component leads and lands on a substrate, by means of a pull type mechanical stress. This test is suitable for evaluating the effects of repeated temperature change on the strength of the solder joint between component terminals and lands on a substrate.</p>	<p>Scope: The test method described in this part of IEC 62137 is applicable to gull-wing lead surface mounting components. The method is designed to test and evaluate the endurance of the solder joint between component leads and lands on a substrate, by means of a pull type mechanical stress. This test is suitable for evaluating the effects of repeated temperature change on the strength of the solder joint between component terminals and lands on a substrate.</p>
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Võtmesõnad:

**Surface mounting technology -
Environmental and endurance test methods
for surface mount solder joint -
Part 1-1: Pull strength test
(IEC 62137-1-1:2007)**

Technique du montage en surface -
Méthodes d'essai d'environnement
et d'endurance des joints de soudure
pour montage en surface -
Partie 1-1: Essai de force d'arrachement
(CEI 62137-1-1:2007)

Oberflächenmontage-Technik -
Verfahren zur Prüfung
auf Umgebungseinflüsse
und zur Prüfung der Haltbarkeit
von Oberflächen-Lötverbindungen -
Teil 1-1: Zugfestigkeitsprüfung
(IEC 62137-1-1:2007)

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European Committee for Electrotechnical Standardization
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Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 91/681/FDIS, future edition 1 of IEC 62137-1-1, prepared by IEC TC 91, Electronics assembly technology, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62137-1-1 on 2007-08-01.

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) 2008-05-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2010-08-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62137-1-1:2007 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60068-2-21 NOTE Harmonized as EN 60068-2-21:2006 (not modified).

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	- ¹⁾	Environmental testing - Part 1: General and guidance	EN 60068-1	1994 ²⁾
IEC 60068-2-14	- ¹⁾	Environmental testing - Part 2: Tests - Test N: Change of temperature	EN 60068-2-14	1999 ²⁾
IEC 60194	- ¹⁾	Printed board design, manufacture and assembly - Terms and definitions	EN 60194	2006 ²⁾
IEC 61188-5-5	200X ³⁾	Printed boards and printed board assemblies - Design and use - Part 5-5: Attachment (land/joint) considerations - Components with gull-wing leads on four sides	-	-
IEC 61190-1-1	- ¹⁾	Attachment materials for electronic assembly - Part 1-1: Requirements for soldering fluxes for high-quality interconnections in electronics assembly	EN 61190-1-1	2002 ²⁾
IEC 61190-1-2	- ¹⁾	Attachment materials for electronic assembly - Part 1-2: Requirements for soldering paste for high-quality interconnects in electronics assembly	EN 61190-1-2	2007 ²⁾
IEC 61190-1-3	- ¹⁾	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 ²⁾
IEC 61249-2-7	- ¹⁾	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 ²⁾ 2005

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

³⁾ At draft stage.

**INTERNATIONAL
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**IEC
62137-1-1**

First edition
2007-07

**Surface mounting technology –
Environmental and endurance test
methods for surface mount solder joint –**

**Part 1-1:
Pull strength test**



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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 1-1: Pull strength test

FOREWORD

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International Standard IEC 62137-1-1 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
91/681/FDIS	91/697/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 the parts in the IEC 62137 series, under the general title *Surface mounting technology – Environmental and endurance test methods for surface mount solder joint*, 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.

A bilingual version of this publication may be issued at a later date.

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

Part 1-1: Pull strength test

1 Scope

The test method described in this part of IEC 62137 is applicable to gull-wing lead surface mounting components.

The method is designed to test and evaluate the endurance of the solder joint between component leads and lands on a substrate, by means of a pull type mechanical stress. This test is suitable for evaluating the effects of repeated temperature change on the strength of the solder joint between component terminals and lands on a substrate.

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IEC 60194: *Printed board design, manufacture and assembly – Terms and definitions*

IEC 61188-5-5, *Printed boards and printed board assemblies – Design and use – Part 5-5: Sectional requirements - Attachment (land/joint) considerations – Components with gull-wing leads on four sides*¹

IEC 61190-1-1, *Attachment materials for electronic assembly – Part 1-1: Requirements for soldering fluxes for high-quality interconnections in electronics assembly*

IEC 61190-1-2: *Attachment materials for electronic assembly – Part 1-2: Requirements for solder pastes for high-quality interconnections in electronics assembly*

IEC 61190-1-3 *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 61249-2-7, *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*

¹ In preparation.