

Workmanship requirements for soldered electronic assemblies -- Part 5: Rework, modification and repair of soldered electronic assemblies

Workmanship requirements for soldered electronic
assemblies -- Part 5: Rework, modification and
repair of soldered electronic assemblies

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 61192-5:2007 sisaldab Euroopa standardi EN 61192-5:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 27.08.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 61192-5:2007 consists of the English text of the European standard EN 61192-5:2007.</p> <p>This document is endorsed on 27.08.2007 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:</p> <p>This part of IEC 61192 provides information and requirements that are applicable to modification, rework and repair procedures for soldered electronic assemblies. It is applicable to specific processes used to manufacture soldered electronic assemblies where components are attached to printed boards and to the relevant parts of resulting products. The standard is also applicable to activities that can form part of the work in assembling mixed technology products. This part of IEC 61192 also contains guidance on design matters where they have relevance to rework.</p>	<p>Scope:</p> <p>This part of IEC 61192 provides information and requirements that are applicable to modification, rework and repair procedures for soldered electronic assemblies. It is applicable to specific processes used to manufacture soldered electronic assemblies where components are attached to printed boards and to the relevant parts of resulting products. The standard is also applicable to activities that can form part of the work in assembling mixed technology products. This part of IEC 61192 also contains guidance on design matters where they have relevance to rework.</p>
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ICS 31.190

Võtmesõnad:

**Workmanship requirements for soldered electronic assemblies -
Part 5: Rework, modification and repair of soldered electronic assemblies
(IEC 61192-5:2007)**

Exigences relatives à la qualité
d'exécution des assemblages
électroniques brasés -
Partie 5: Retouche, modification
et réparation des assemblages
électroniques brasés
(CEI 61192-5:2007)

Anforderungen an die Ausführungsqualität
von Lötbaugruppen -
Teil 5: Nacharbeit, Änderungen
und Reparatur von gelöteten
elektronischen Baugruppen
(IEC 61192-5:2007)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

Foreword

The text of document 91/652/FDIS, future edition 1 of IEC 61192-5, prepared by IEC TC 91, Electronics assembly technology, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61192-5 on 2007-06-01.

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) 2008-03-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2010-06-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61192-5:2007 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 61760-1	NOTE	Harmonized as EN 61760-1:2006 (not modified).
ISO 9000	NOTE	Harmonized as EN ISO 9000:2005 (not modified).
ISO 9001	NOTE	Harmonized as EN ISO 9001:2000 (not modified).
ISO 9453	NOTE	Harmonized as EN ISO 9453:2006 (not modified).
ISO 9454-1	NOTE	Harmonized as EN 29454-1:2003 (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 60194	- ¹⁾	Printed board design, manufacture and assembly - Terms and definitions	EN 60194	2006 ²⁾
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
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
IEC 61191-1	1998	Printed board assemblies - Part 1: Generic specification - Requirements for soldered electrical and electronic assemblies using surface mount and related assembly technologies	EN 61191-1	1998
IEC 61191-2	1998	Printed board assemblies - Part 2: Sectional specification - Requirements for surface mount soldered assemblies	EN 61191-2	1998
IEC 61191-3	- ¹⁾	Printed board assemblies - Part 3: Sectional specification - Requirements for through-hole mount soldered assemblies	EN 61191-3	1998 ²⁾

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61191-4	- ¹⁾	Printed board assemblies - Part 4: Sectional specification - Requirements for terminal soldered assemblies	EN 61191-4	1998 ²⁾
IEC 61192-1	- ¹⁾	Workmanship requirements for soldered electronic assemblies - Part 1: General	EN 61192-1	2003 ²⁾
IEC 61192-2	- ¹⁾	Workmanship requirements for soldered electronic assemblies - Part 2: Surface-mount assemblies	EN 61192-2	2003 ²⁾
IEC 61192-3	- ¹⁾	Workmanship requirements for soldered electronic assemblies - Part 3: Through-hole mount assemblies	EN 61192-3	2003 ²⁾
IEC 61192-4	- ¹⁾	Workmanship requirements for soldered electronic assemblies - Part 4: Terminal assemblies	EN 61192-4	2003 ²⁾
IEC 61193-1	- ¹⁾	Quality assessment systems - Part 1: Registration and analysis of defects on printed board assemblies	EN 61193-1	2002 ²⁾
IEC 61249	Series	Materials for printed boards and other interconnecting structures	EN 61249	Series

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INTERNATIONAL STANDARD

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Workmanship requirements for soldered electronic assemblies –

Part 5: Rework, modification and repair of soldered electronic assemblies



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

WORKMANSHIP REQUIREMENTS FOR SOLDERED ELECTRONIC ASSEMBLIES –

Part 5: Rework, modification and repair of soldered electronic assemblies

FOREWORD

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International Standard IEC 61192-5 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
91/652/FDIS	91/686/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 61192 series, under the general title *Workmanship requirements for soldered electronic assemblies*, 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.

WORKMANSHIP REQUIREMENTS FOR SOLDERED ELECTRONIC ASSEMBLIES –

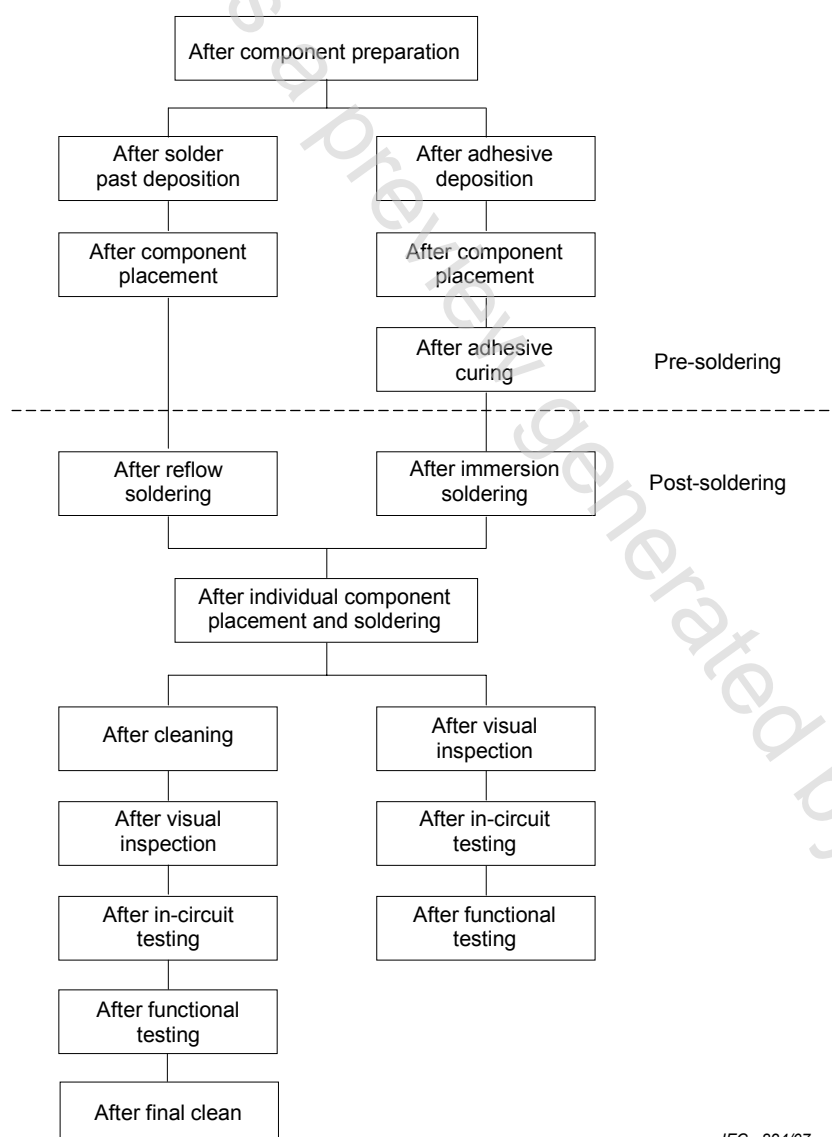
Part 5: Rework, modification and repair of soldered electronic assemblies

1 Scope

This part of IEC 61192 provides information and requirements that are applicable to modification, rework and repair procedures for soldered electronic assemblies. It is applicable to specific processes used to manufacture soldered electronic assemblies where components are attached to printed boards and to the relevant parts of resulting products. The standard is also applicable to activities that can form part of the work in assembling mixed technology products.

This part of IEC 61192 also contains guidance on design matters where they have relevance to rework.

NOTE Typical in-process surface-mount rework activities to which this standard applies are shown in Figure 1.



IEC 824/07

Figure 1 – Typical in-process modification, rework or repair activities

2 Normative references

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.

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

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 paste for high-quality interconnections in electronics assembly*

IEC 61190-1-3, *Attachment materials for electronics assembly – Part 1-3: Requirements for electronic grade solder alloys and fluxed and non-fluxed solid solders for electronic soldering applications*

IEC 61191-1:1998, *Printed board assemblies – Part 1: Generic specification – Requirements for soldered electrical and electronic assemblies using surface mount and related assembly technologies*

IEC 61191-2:1998, *Printed board assemblies – Part 2: Sectional specification – Requirements for surface mount soldered assemblies*

IEC 61191-3, *Printed board assemblies – Part 3: Sectional specification – Requirements for through-hole mount soldered assemblies*

IEC 61191-4, *Printed board assemblies – Part 4: Sectional specification – Requirements for terminal soldered assemblies*

IEC 61192-1, *Workmanship requirements for soldered electronic assemblies – Part 1: General*

IEC 61192-2, *Workmanship requirements for soldered electronic assemblies – Part 2: Surface-mount assemblies*

IEC 61192-3, *Workmanship requirements for soldered electronic assemblies – Part 3: Through-hole mount assemblies*

IEC 61192-4, *Workmanship requirements for soldered electronic assemblies – Part 4: Terminal assemblies*

IEC 61193-1, *Quality assessment systems – Part 1: Registration and analysis of defects on printed board assemblies*

IEC 61249 (all parts), *Materials for printed boards and other interconnecting structures*