



NSAI
Standards

Irish Standard
I.S. EN 61190-1-2:2014

Attachment materials for electronic assembly
-- Part 1-2: Requirements for soldering pastes
for high-quality interconnects in electronics
assembly

I.S. EN 61190-1-2:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

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EUROPEAN STANDARD

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NORME EUROPÉENNE

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May 2014

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Supersedes EN 61190-1-2:2007

English Version

**Attachment materials for electronic assembly - Part 1-2:
Requirements for soldering pastes for high-quality interconnects
in electronics assembly
(IEC 61190-1-2:2014)**

Matériaux de fixation pour les assemblages électroniques -
Partie 1-2: Exigences relatives aux pâtes à braser pour les
interconnexions de haute qualité dans les assemblages de
composants électroniques
(CEI 61190-1-2:2014)

Verbindungsmaterialien für Baugruppen der Elektronik - Teil
1-2: Anforderungen an Lotpaste für hochwertige
Verbindungen in der Elektronikmontage
(IEC 61190-1-2:2014)

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Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of document 91/1154A/FDIS, future edition 3 of IEC 61190-1-2, prepared by IEC/TC 91 "Electronics assembly technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61190-1-2:2014.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2014-12-26
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-03-26

This document supersedes EN 61190-1-2:2007.

EN 61190-1-2:2014 includes the following significant technical changes with respect to EN 61190-1-2:2007:

- a) modification of the solder powder size in Table 2;
- b) addition of the information of "Reflow condition and profile" in Annex B;
- c) addition of a new Annex C.

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The text of the International Standard IEC 61190-1-2:2014 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 61189-5:2006 | NOTE | Harmonised as EN 61189-5:2006 (not modified). |
| IEC 61189-6:2006 | NOTE | Harmonised as EN 61189-6:2006 (not modified). |

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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

Publication	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60194	-	Printed board design, manufacture and assembly - Terms and definitions	EN 60194	-
IEC 61189-5-3	-	Test methods for electrical materials, interconnection structures and assemblies - Part 5-3: Test methods for printed board assemblies: Soldering paste	EN 61189-5-3	-
IEC 61190-1-1	-	Attachment materials for electronic assemblies - Part 1-1: Requirements for soldering fluxes	-	-
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	EN 61190-1-3	-
ISO 9454-2	-	Soft soldering fluxes - Classification and requirements - Part 2: Performance requirements	EN ISO 9454-2	-

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IEC 61190-1-2

Edition 3.0 2014-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Attachment materials for electronic assembly –
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electronics assembly**

**Matériaux de fixation pour les assemblages électroniques –
Partie 1-2: Exigences relatives aux pâtes à braser pour les interconnexions de
haute qualité dans les assemblages de composants électroniques**



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Edition 3.0 2014-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Attachment materials for electronic assembly –
Part 1-2: Requirements for soldering pastes for high-quality interconnects in
electronics assembly**

**Matériaux de fixation pour les assemblages électroniques –
Partie 1-2: Exigences relatives aux pâtes à braser pour les interconnexions de
haute qualité dans les assemblages de composants électroniques**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ATTACHMENT MATERIALS FOR ELECTRONIC ASSEMBLY –

**Part 1-2: Requirements for soldering pastes
for high-quality interconnects in electronics assembly**

FOREWORD

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International Standard IEC 61190-1-2 has been prepared by IEC technical committee 91: Electronics assembly technology.

This third edition cancels and replaces the second edition published in 2007. This edition constitutes a technical revision.

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

- a) modification of the solder powder size in Table 2;
- b) addition of the information of "Reflow condition and profile" in Annex B;
- c) addition of a new Annex C.

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

CDV	Report on voting
91/1154A/FDIS	91/1166/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 61190 series, published under the general title *Attachment materials for electronic assembly*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability 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,
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- amended.

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INTRODUCTION

This part of IEC 61190 defines the characteristics of solder paste through the definitions of properties and specification of test methods and inspection criteria. Materials include solder powder and solder paste flux blended to produce solder paste. Solder powders are classified according to both shape and size distribution of the particles. It is not the intention of this standard to exclude those particle sizes or distributions not specifically listed. For flux properties of solder paste, including classification and testing, see IEC 61190-1-1.

The requirements for solder paste are defined in general terms. In practice, where more stringent requirements are necessary, additional requirements may be defined by mutual agreement between the user and supplier. Users are cautioned to perform tests (beyond the scope of this specification) to determine the acceptability of the solder paste for specific processes.

This standard is intended to be applicable to all types of solder paste used for soldering in general, as well as for soldering in electronics assembly. The solder pastes involved relate to all aspects of application. Generic specifications for soldering pastes are given in ISO 9454-2.

ATTACHMENT MATERIALS FOR ELECTRONIC ASSEMBLY –

Part 1-2: Requirements for soldering pastes for high-quality interconnects in electronics assembly

1 Scope

This part of IEC 61190 specifies general requirements for the characterization and testing of solder pastes used to make high-quality electronic interconnections in electronics assembly. This standard serves as a quality control document and is not intended to relate directly to the material's performance in the manufacturing process.

Related information on flux characterization, quality control and procurement documentation for solder flux and flux containing material may be found in IEC 61190-1-1.

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

IEC 61189-5-3¹, *Test methods for electrical materials, interconnection structures and assemblies – Part 5-3: Test methods for printed board assemblies: Soldering paste*

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

IEC 61190-1-3, *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*

ISO 9454-2, *Soft soldering fluxes – classification and requirements – Part 2: Performance requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60194, as well as the following apply.

3.1 drying

ambient or heating process to evaporate volatile components from solder paste which may, or may not, result in melting of rosin/resin

3.2 rheology

¹ To be published.

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