

Attachment materials for electronic assembly —

Part 1-1: Requirements for soldering fluxes for high-quality interconnections in electronics assembly

The European Standard EN 61190-1-1:2002 has the status of a
British Standard

ICS 31.190

National foreword

This British Standard is the official English language version of EN 61190-1-1:2002. It is identical with IEC 61190-1-1:2002.

The UK participation in its preparation was entrusted to Technical Committee EPL/501, Electronic assembly technology, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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Attachment materials for electronic assembly
Part 1-1: Requirements for soldering fluxes for high-quality
interconnections in electronics assembly
(IEC 61190-1-1:2002)

Matériaux de fixation pour
les assemblages électroniques
Partie 1-1: Exigences relatives aux
flux de brasage pour les interconnexions
de haute qualité dans les assemblages
de composants électroniques
(CEI 61190-1-1:2002)

Verbindungsmaterialien für
Baugruppen der Elektronik
Teil 1-1: Anforderungen an Weichlöt-
Flussmittel für hochwertige Verbindungen
in der Elektronikmontage
(IEC 61190-1-1:2002)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 91/277/FDIS, future edition 1 of IEC 61190-1-1, prepared by IEC TC 91, Electronics assembly technology, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61190-1-1 on 2002-06-01.

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) 2003-03-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2005-06-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A and ZA are normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61190-1-1:2002 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 61190-1-2	NOTE	Harmonized as EN 61190-1-2:2002 (not modified).
IEC 61190-1-3	NOTE	Harmonized as EN 61190-1-3:2002 (not modified).
IEC 61191-1	NOTE	Harmonized as EN 61191-1:1998 (not modified).
IEC 61191-2	NOTE	Harmonized as EN 61191-2:1998 (not modified).
IEC 61191-3	NOTE	Harmonized as EN 61191-3:1998 (not modified).
IEC 61191-4	NOTE	Harmonized as EN 61191-4:1998 (not modified).
ISO 9000	NOTE	Harmonized as EN ISO 9000:2000 (not modified).
ISO 9001	NOTE	Harmonized as EN ISO 9001:2000 (not modified).

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INTRODUCTION

This part of IEC 61190 defines the classification of soldering materials through specifications of test methods and inspection criteria. These materials include liquid flux, paste flux, solder-paste flux, solder-preform flux, and flux cored solder. It is not the intent of this standard to exclude any acceptable flux or soldering aid material; however, these materials must produce the desired electrical and metallurgical interconnection.

Requirements for soldering fluxes are defined in general terms for standardized classification. In practice, where more stringent requirements are necessary or other manufacturing processes are used, these should be defined as additional requirements by the user. Formic acid is not considered a flux for the purpose of this document. The generic specifications for soldering fluxes are given by ISO.

This standard is intended to be applicable to all types of flux as used for soldering in general and to soldering in electronics in particular. The fluxes involved relate to all aspects of application, such as in wave soldering, printed wiring board (PWB) fabrication, lead tinning, and solder reflow. Materials include solder pastes, flux-cored wire, and flux-coated preforms. Soldering fluxes covered by this standard are intended for use in various consumer, industrial and commercial electronics soldering applications of industry applications.

ATTACHMENT MATERIALS FOR ELECTRONIC ASSEMBLY –

Part 1-1: Requirements for soldering fluxes for high-quality interconnections in electronics assembly

1 Scope and object

This part of IEC 61190 specifies general requirements for the classification and testing of soldering fluxes for high-quality interconnections in electronics assembly. This standard is a flux characterization, quality control, and procurement document for solder flux and flux containing material in electronics assembly technology.

2 Normative references

The following referenced documents are indispensable for the application of the 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 61189-2, *Test methods for electrical materials, interconnection structures and assemblies – Part 2: Test methods for materials for interconnection structures*

IEC 61189-3, *Test methods for electrical materials, interconnection structures and assemblies – Part 3: Test methods for interconnection structures (printed boards)*

ISO 9002:1994, *Quality systems – Model for quality assurance in production, installation and servicing*

ISO 9455-16, *Soft soldering fluxes – Test methods – Part 16: Flux efficacy tests, wetting balance method*

3 Terms and definitions

For the purposes of this part of IEC 61190, the terms and definitions given in English only in IEC 60194 ¹⁾ and the following apply.

3.1 form

flux additionally classified according to the form that it takes – liquid (L), solid (S), or paste (P)

3.2 inorganic flux

aqueous flux solution of inorganic acids and halides

[IEC 60194]

¹⁾ Certain definitions of IEC 60194 have been translated into French.