SLOVENSKI STANDARD

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Printed boards - Part 1: Generic specification

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EUROPEAN STANDARD **EN 62326-1**

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ICS 31.180 Supersedes EN 62326-1:1997

English version

Printed boards
Part 1: Generic specification
(IEC 62326-1:2002)

Cartes imprimées
Partie 1: Spécification générique
(CEI 62326-1:2002)

Leiterplatten
Teil 1: Fachgrundspezifikation
(IEC 62326-1:2002)

This European Standard was approved by CENELEC on 2002-06-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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

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

Ref. No. EN 62326-1:2002 E

Foreword

The text of document 91/274/FDIS, future edition 2 of IEC 62326-1, prepared by IEC TC 91, Electronics assembly technology, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62326-1 on 2002-06-01.

This European Standard supersedes EN 62326-1:1997.

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– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2005-06-01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.
Annexes designated "informative" are given for information only.
In this standard, annexes M and ZA are normative and annexes A, B, C, D, E, F, G, H, I, J, K and L are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62326-1:2002 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

Publication	Year	Title	EN/HD	Year
IEC 60194	- [1)]	Printed board design, manufacture and assembly - Terms and definitions	-	-
IEC 61182-1	1994	Printed boards - Electronic data description and transfer Part 1: Printed board description in digital form	-	-
IEC 61189-3	1997	Test methods for electrical materials, printed boards and other interconnection structures and assemblies Part 3: Test methods for interconnection structures (printed boards)	EN 61189-3	1997
IEC 61249-2-4	- [1)]	Materials for printed boards and other interconnecting structures Part 2-4: Reinforced base materials, clad and unclad - Polyester non-woven/woven fibreglass laminated sheet of defined flammability (vertical burning test), copper-clad	EN 61249-2-4	2002 [2)]
IEC 61249-2-7	- [1)]	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	2002 [2)]
IEC 61249-2-12	- [1)]	Part 2-12: Sectional specification set for reinforced base materials, clad and unclad - Epoxide non-woven aramid laminate of defined flammability, copper-clad	EN 61249-2-12	1999 [2)]
IEC 62326	Series	Printed boards	EN 62326	Series

[1)] Undated reference.

[2)] Valid edition at date of issue.

Publication	Year	Title	EN/HD	Year
IEC 62326-4	- [1)]	Part 4: Rigid multilayer printed boards with interlayer connections - Sectional specification	EN 62326-4	1997 [2)]
IEC 62326-4-1	- [1)]	Part 4: Rigid multilayer printed boards with interlayer connections - Sectional specification Section 1: Capability Detail Specification - Performance levels A, B and C	EN 62326-4-1	1997 [2)]
IEC QC 001001	- [1)]	IEC quality assessment system for electronic components (IECQ) - Basic rules	-	-
IEC QC 001002-1	- [1)]	IEC quality assessment system for electronic components (IECQ) - Rules of procedure Part 1: Administration	-	-
IEC QC 001002-2	- [1)]	Part 2: Documentation	-	-
IEC QC 001002-3	- [1)]	Part 3: Approval procedures	-	-
IEC QC 001005	- [1)]	Register of firms, products and services approved under the IECQ system, including ISO 9000	-	-
ISO 9001	2000	Quality management systems - Requirements	EN ISO 9001	2000

NORME INTERNATIONALE

INTERNATIONAL STANDARD

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Partie 1:
Spécification générique

Printed boards –

Part 1:
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For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PRINTED BOARDS –

Part 1: Generic specification

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.

3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

6) Attention is drawn to the possibility that some of the elements of this international standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62326-1 has been prepared by IEC technical committee 91: Electronics assembly technology.

This second edition cancels and replaces the first edition, published in 1996, and constitutes a technical revision.

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

FDIS	Report on voting
91/274/FDIS	91/285/RVD

Full information on the voting for 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 3.

Annex M forms an integral part of this standard.

Annexes A through L are for information only.

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

The committee has decided that the contents of this publication will remain unchanged until 2007. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

INTRODUCTION

IEC 62326 is applicable to printed boards, irrespective of their method of manufacture, when they are ready for the mounting of components.

IEC 62326 is composed of separate parts covering information for the designer, manufacturer, and user generic, sectional and capability detail specifications for the IECQ and requirements for the various types of printed boards.

IECQ is the IEC quality assessment system for electronic components. It is a third-party certification system. Its rules (including a description of the role of the inspectorates) are published in the following:

– IEC QC 001001: Basic Rules;

– IEC QC 001002: Rules of Procedure (several parts).

This part of IEC 62326 comprises the generic specification for printed boards of assessed quality and forms part of the sectional specifications and capability detail specifications circulated to the National Committees.

EXAMPLE

For rigid multilayer printed board the following standards apply: IEC 62326-1, IEC 62326-4 and IEC 62326-4-1.

All three standards should be considered jointly.

For further information regarding specification structure and inter-relationship between the specifications, see annex B.

PRINTED BOARDS –

Part 1: Generic specification

1 Scope

This part of IEC 62326 defines capability approval (CA) procedures for printed boards. When IECQ recognition is required, the capability approval procedures of IEC 001002 should be used. In addition, a technology approval (TA) schedule may also be provided as an alternative for manufacturers employing a system of process control for establishing product conformity. Both CA and TA procedures apply to printed boards irrespective of their methods of manufacture, when they are ready for the mounting of components. The information and requirements may also be used for second-party approvals or for self-declaration by a manufacturer of products covered by these specifications.

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 61182-1:1994, *Printed boards – Electronic data description and transfer – Part 1: Printed board description in digital form*

IEC 61189-3:1997, *Test methods for electrical materials, interconnection structures and assemblies – Part 3: Test methods for interconnection structures (printed boards)*

IEC 61249-2-4, *Materials for printed boards and other interconnecting structures – Part 2-4: Reinforced base materials, clad and unclad – Polyester non-woven/woven fiberglass laminated sheet of defined flammability (vertical burning test), copper-clad*

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*

IEC 61249-2-12, *Materials for printed boards and other interconnecting structures – Part 2-12: Sectional specification set for reinforced base materials, clad and unclad – Epoxide non-woven aramid laminate of defined flammability, copper-clad*

IEC 62326 (all parts), *Printed boards*

IEC 62326-4, *Printed boards – Part 4: Rigid multilayer printed boards with interlayer connections – Sectional specification*

IEC 62326-4-1, *Printed boards – Part 4: Rigid multilayer printed boards with interlayer connections – Sectional specification – Section 1: Capability Detail Specification – Performance levels A, B and C*

IEC QC 001001, *IEC Quality Assessment System for Electronic Components (IECQ) – Basic Rules*

IEC 001002-1, *IEC Quality Assessment System for Electronic Components (IECQ) – Rules of procedure – Part 1: Administration*

IEC QC 001002-2, *IEC Quality Assessment System for Electronic Components (IECQ) – Rules of procedure – Part 2: Documentation*

IEC QC 001002-3, *IEC Quality Assessment System for Electronic Components (IECQ) – Rules of procedure – Part 3: Approval procedures*

IEC QC 001005, *Register of Firms, Products and Services approved under the IECQ System, including ISO 9000*

ISO 9001:2000, *Quality management systems – Requirements*

3 General

3.1 General considerations

Printed boards differ from most other electronic components in important factors, such as:

– there are no standard boards with standard patterns and dimensions but an infinite variety of shapes and circuit configurations;
– they are "custom tailored", i.e. all details for a particular board are agreed between manufacturer and customer;
– although they are made in considerable total quantities, the production quantity of a particular printed board may be small.

The qualification approval procedures detailed in clause 3 of IEC QC 001002-3 are not considered suitable for the approval of printed board manufacturers, and the capability approval procedures of clause 4 of IEC QC 001002-3 shall be applied. Additionally, the manufacturer shall demonstrate that the quality management system complies with ISO 9001, as appropriate. Manufacturers seeking IECQ capability approval shall hold IECQ organization approval in accordance with clause 2 of IEC QC 001002-3 as a prerequisite.

In the case of printed boards, capability approval is based on the use of capability test board (CTB) or suitable production printed board (PPB) as capability qualifying components with an appropriate selection of test methods and requirements for each type of printed board, for example:

– rigid single and double-sided printed boards without interlayer connections;
– rigid single and double-sided printed boards with interlayer connections;
– rigid multilayer printed boards with interlayer connections;
– flexible multilayer printed boards with interlayer connections.

NOTE This list is not intended to be exhaustive. Conductive holes may be achieved by plating-through, by other metallization techniques or by deposit of conductive polymeric materials. Requirements for non-plated-through conductive holes are under consideration.