

Harmonized system of quality assessment for electronic components

Sectional specification: Flexible printed boards with through connections

The European Standard EN 123500 : 1992 with the inclusion of amendment A2, 1995 has the status of a British Standard

ICS 31.180

National foreword

This British Standard has been produced under the direction of the Electronics Components Standards Policy Committee. It is identical with CENELEC Electronic Components Committee (CECC) 23500 : 1985 'Harmonized system of quality assessment for electronic components: Sectional specification: Flexible printed boards with through connections'.

- This standard is a harmonized specification within the CECC system and should be read in conjunction with BS EN 123000. In 1992 the CENELEC Electronic Components Committee (CECC) accepted CECC 23500 : 1985 as European Standard EN 123500 : 1992.
- Amendment 1 to BS EN 123500 implemented amendment A2 : 1995 to EN 123500. Amendment 2 was issued by BSI to correct errors in amendment 1.

Cross-references

The British Standard which implements CECC 00100 is BS 9000 'General requirements for a system for electronic components of assessed quality' Part 2 'Specification for national implementation of CECC basic rules and rules of procedure'.

International standard	Corresponding British Standard
CECC 23000 : 1985	BS EN 123000 : 1992 Harmonized system of quality assessment for electronic components: Generic specification : Printed boards (Identical)
IEC 68	BS 2011 Basic environmental testing procedures (Most Parts are identical)
IEC 249	BS EN 60249 Base materials for printed circuits (Most Parts are identical)
IEC 326-2 : 1976	BS 6221 : Printed wiring boards Part 2 : Methods of test (Technically equivalent)
IEC 326-8 : 1981	Part 8 : 1982 Method for specifying single and double sided flexible printed wiring boards with through connections (Identical)

There is no British Standard equivalent to CECC 00 010 : 1980, which comprises only a list of the tests in IEC 326-2 and its supplement IEC 326-2A.

The Technical Committee has reviewed the provisions of IEC 194 : 1975, IEC 321 : 1970 and IEC 326-3 : 1980, to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

The following table identifies the current issue of each page. Issue 1 indicates that a page has been introduced for the first time by amendment. Subsequent issue numbers indicate an updated page. Double vertical sidelining on replacement pages indicates the most recent changes (amendment, addition, deletion).

Page	Issue	Page	Issue
Front cover	3	16	3
Inside front cover	3	17	3
a	2	18	3
b	blank	19 to 26	original
EN title page	1	Inside back cover	original
d	1	Back cover	3
1 to 15	original		

Wherever BS CECC 23500 : 1990 appears in this standard, it should be read as BS EN 123500 : 1992.

Wherever CECC 23000 and CECC 23400 appear in this standard, they should be read as EN 23000 and EN 23400 respectively.

ICS 31.180

Descriptors: Flexible printed boards, with through connections, capability test, quality conformance inspection, test patterns

English version

Sectional Specification:
Flexible printed boards with through connections
(includes amendment A2 : 1995)

Spécification intermédiaire:
Cartes imprimées souples avec
connexions transversales
(inclut l'amendement A2 : 1995)

Rahmenspezifikation:
Flexible Leiterplatten mit
Durchverbindungen
(enthält Änderung A2 : 1995)

This European Standard was approved by the CENELEC Electronic Components Committee (CECC) on 1995-07-04. 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

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Ref. No. EN 123500 : 1992/A2 : 1995 E

Foreword to amendment A2

This amendment was prepared by CLC/TC
CECC/WG 23.

The text of the draft was submitted to the Unique
Acceptance Procedure and was approved by
CENELEC as amendment A2 to EN 123500 : 1992
on 1995-07-04.

The following dates were fixed:

- latest date by which the
amendment has to be
implemented at national
level by publication of an
identical national standard
or by endorsement (dop) 1996-07-01
- latest date by which the
national standards
conflicting with the
amendment have to be
withdrawn (dow) 1996-07-01

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FOREWORD

The CENELEC Electronic Components Committee (CECC) is composed of those member countries of the European Committee for Electrotechnical Standardization (CENELEC) who wish to take part in a harmonized System for electronic components of assessed quality.

The object of the System is to facilitate international trade by the harmonization of the specifications and quality assessment procedures for electronic components, and by the grant of an internationally recognized Mark, or Certificate, of Conformity. The components produced under the System are thereby accepted by all member countries without further testing.

The specification has been formally approved by the CECC, and has been prepared for those countries taking part in the System who wish to issue national harmonized SECTIONAL SPECIFICATIONS for FLEXIBLE PRINTED BOARDS WITH THROUGH CONNECTIONS. It should be read in conjunction with the current regulations for the CECC System.

At the date of printing of this document the member countries of the CECC are Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

PREFACE

This Sectional Specification was prepared by CECC Working Group 23: Printed Circuits.

It is based on publications of the International Electrotechnical Commission (IEC).

The text of this specification was circulated to the CECC for voting in the document indicated below and was ratified by the President of the CECC for printing as a CECC Specification.

<u>Document</u>	<u>Date of Voting</u>	<u>Report on the Voting</u>
CECC(Secretariat)1627	March 1985	CECC(Secretariat)1729

SECRETARIAT NOTE:

DUE TO THE URGENT INDUSTRIAL NEED FOR THIS SPECIFICATION, THE PRESIDENT OF THE CECC HAS RULED THAT IT BE PUBLISHED WITHOUT THE FULL EDITORIAL PROCEDURE BEING APPLIED. USERS OF THE SPECIFICATION ARE ASKED TO REPORT TO THE CECC GENERAL SECRETARIAT ANY ERRORS THEY FIND SO THAT AMENDING ACTION CAN BE INITIATED.

The text is published initially in English and German. The French version will follow as soon as it has been prepared.

1. Introduction

IEC 326-8 is the IEC-Standard for flexible printed boards with through connections. The following document comprises this IEC-Standard and in accordance with the generic specification CECC 23 000 the information additionally necessary for printed boards intended to be handled within the CENELEC system for Electronic Components of Assessed Quality.

1.1 Scope and Object

This document is a Sectional Specification (SS) relating to flexible printed boards with through connections irrespective of their method of manufacture, when they are ready for mounting of the components. It defines the characteristics to be assessed and the test methods to be used for capability approval testing and for quality conformance inspection (lot-by-lot and periodic inspection).

1.2 Related documents

IEC 68	- Basic environmental testing procedures
IEC 194	- Terms and definitions for printed circuits
IEC 249	- Metal-clad base materials for printed circuits
IEC 321	- Guidance for the design and use of components intended for mounting on printed boards.
IEC 326-2	- Printed boards - test methods
IEC 326-3	- Design and use of printed boards
IEC 326-8	- Specification for flexible printed boards with through connections
CECC 00 010	- Printed boards - test methods
CECC 23 000	- Generic Specification Printed boards of assessed quality.

2. General

This Sectional Specification (SS) applies to flexible printed boards with through connections and is intended as a basis for the preparation of

- Capability Detail Specification (Cap DS) applying to specific materials, e.g. according to IEC 249-2, and to be used for capability approval procedures.
It may be necessary to have a Cap DS for each type of material. A Cap DS may be prepared by an international or a national body or by a manufacturer (see also CECC 00 111).
- Customer Detail Specification (CDS) for the custom built printed boards, according to 5 of CECC 23 000. The CDS will normally be written by the customer and allocated a number within his own system.

Further details are also given in CECC 23 000 and in CECC 00 107 Part III.

Table I contains the basic characteristics that will normally be important for flexible printed boards with through connections and makes reference to the appropriate tests to verify these characteristics.

Table II contains the additional characteristics that may be important for certain flexible printed boards with through connections and/or certain applications and makes reference to the appropriate tests to verify these characteristics. Where necessary, the relevant specification may quote characteristics and tests from this Table II.

Where additional details for a test have to be specified in the relevant specification, this is indicated by an asterisk in the relevant column. These details shall then be specified in accordance with CECC 00 010 (IEC 326-2).

Table III contains the capability test programme. A specified composite test pattern (CTP) is used as capability qualifying component.

Table IV contains the information for the quality conformance inspection.

The tables are not intended to prescribe a test sequence, the tests may be carried out in any sequence, unless otherwise specified.

3. Test specimens

3.1 Capability Approval

3.1.1 Basic Capability

The test shall be carried out on the composite test pattern given in 8.

3.1.2 Additional Capability

3.5.3 of CECC 23 000 shall apply. For multiple arrangements see also 8.

3.1.3 Maintenance of Capability Approval

3.8 of CECC 23 000 shall apply.

3.2 Quality conformance inspection

Unless otherwise specified production boards and/or specially designed test patterns may be used for carrying out tests for the lot-by-lot and the periodic inspection.

Where specially designed test patterns shall be used they may be included in the panel. They may be based on the appropriate pattern of the composite test pattern clause 8. Consultation between manufacturer and customer will usually be necessary.

4. Relevant specification

The term "Relevant Specification" means a product specification for an actual printed board, i.e. a CDS as well as a Cap DS applied to a specific material and technique, as applicable.

The relevant specification shall contain all information necessary to define the printed board clearly and completely. The recommendations given in IEC 326-3 shall preferably be followed.

Care should be taken to avoid unnecessary prescriptions. Permissible deviations shall be stated where necessary, nominal values without tolerances or simple maxima or minima shall be given where sufficient. Where tolerances are necessary for certain areas or parts of the printed board only, they shall be applied and restricted to those areas or parts.

If there are several possibilities of presentation, of tolerance classes etc., the selections given in IEC 326-3 shall preferably be applied.

In case of discrepancy between the CDS and any other pertinent specification (e.g. BS, GS, or SS), the CDS shall prevail.

5. Characteristics of printed boards

Basic characteristics of flexible printed boards with through connections are given in Table I.

Additional characteristics of flexible printed boards with through connections are given in Table II.