

**Implementation of
CECC 00804:1996**

**Harmonized system of quality
assessment for electronic components**

**Interpretation of
“EN ISO 9000:1994” —
Reliability aspects for
electronic components**

ICS 31.020

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This British Standard, having been prepared under the direction of the Management Systems Sector Board, was published under the authority of the Standards Board and comes into effect on 15 July 1996

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The following BSI references relate to the work on this standard:
Committee reference DS/1
Draft for comment 93/408001 DC

ISBN 0 580 26111 5

Amendments issued since publication

Amd. No.	Date	Comments

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National foreword

This British Standard reproduces verbatim CECC 00804:1996 *Guidance document: Interpretation of “EN ISO 9000:1994” Reliability aspects for electronic components*, published by the European Committee for Electrotechnical Standardization (CENELEC) and implements it as the UK national standard.

This British Standard is published under the direction of the Management Systems Sector Board (MSSB) whose Technical Committee DS/1 has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international committee any enquiries on interpretation, proposals for change and keep UK interests informed;
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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the CECC title page, pages 2 to 20 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

English version

Guidance document:
Interpretation of “EN ISO 9000:1994”
Reliability aspects for electronic components

Document guide:
Application de la “EN ISO 9000:1994”
à la fiabilité des composants
électroniques

Leitfaden:
Anwendung von “EN ISO 9000:1994”
Kriterien für die Zuverlässigkeit von
elektronischen Bauelementen



This CECC Specification was approved on 1995-11-28.

This CECC Specification 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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Foreword

This CECC Guidance Document was prepared by CLC/TC CECC WG Reliability.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as CECC 00804 on 1995-11-28.

This document is a revision of CECC 00804:1994. This second issue is now consistent with EN ISO 9000:1994. The title has been modified to reflect this. Amendments have been made to the text to enhance clarity.

The following dates were fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1996-06-01
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 1996-06-01

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Section A. Guide

Introduction

0.1 General introduction to CECC 00804

EN 100114-1 provides the basis for all CECC approvals. It incorporates the requirements of EN ISO 9000:1994 which is widely acknowledged as setting the ground rules for an organisation's quality system. It may also be used as the basis for defining policy and procedures relating to product reliability.

Many components fail (i.e. exhibit inadequate reliability) due to inadequate procedures in design, test, customer interface, etc. This guide assists in identifying such procedural deficiencies and provides guidance on the reliability aspects of EN ISO 9000. General guidance in applying EN ISO 9000 to the electronics components industry is under consideration. Process assessment schedules in the CECC 200000 series give additional guidance for specialist processes and services.

Attention is also drawn to CECC 00809: GUIDANCE DOCUMENT, QUESTIONNAIRE FOR AUDITING IC AND ASIC MANUFACTURING LINE (based on EN 190000).

CECC 00804 is intended as guidance material for use by engineers, technicians and managers throughout the industry. It is issued as a single document containing the following sections:

Section A. Guide: This section helps organisations to prepare for assessment against the Section B Check List by posing secondary questions and identifying possible acceptable answers. The application of the Check List and Guide by different organisations is described in clauses 0.2 to 0.4 below.

Section B. Check List: This section provides a set of questions to be used in assessing an organisation's competence in reliability matters.

CECC 00804 is supported by CECC 00805: General Guide to Component Reliability, which describes the principles and concepts behind this guide and explains relevant terminology, objectives and "best practices" associated with component reliability.

This Issue 2 is now consistent with EN ISO 9000, and the title has been modified to reflect this. Amendments have been made to the text to enhance clarity.

0.2 Application of CECC 00804 by component manufacturers and specialist contractors

By applying this guidance information whilst developing and documenting those procedures necessary to gain CECC approval, component manufacturers and specialist contractors can do much to ensure the reliability of their product or service. The questions are designed to focus the mind of personnel in all parts of the organisation so that appropriate reliability issues are continually considered as objectives of their activity.

The check list is thus best used for internal audit purposes to assess the current level of competence and to indicate areas for improvement.

0.3 Application of CECC 00804 by other organisations

Whilst the prime use of this guide is likely to be in the assessment of component suppliers or of potential suppliers, much of the guidance given can also be used by other organisations.

Attention is drawn to IEC 300-1/ISO 9000-4 "Application (of ISO 9000) for Dependability Management", which states:

"It (dependability assurance) is a responsibility to be shared by the supplier and customer."

The adoption of similar approaches and close liaison between component manufacturer and customer will do much to reduce the confusions which often lead to unreliability.

0.4 Application of CECC 00804 by auditing bodies

When used by auditing bodies, whether second or third party, this guide helps to maintain consistency between auditors.

Guidance

1 Management responsibility

1.1 Does the company have a reliability policy?

Has the company consciously addressed reliability? Ideally, there should be a policy statement, signed by a senior executive.

1.2 Who has overall responsibility for implementation of this policy?

Who has responsibility is not as important as the fact that a responsible person with sufficient authority has been identified and made known. This responsibility may change through the life cycle of the product, e.g. from design to production manager.

1.3 Can suspect reliability be used as a justification for stopping of production?

Can production be stopped or other action taken to prevent suspect items from being released to the customer? Ideally continuous monitoring of reliability should prevent the need for such action, but there is a need for a staff member of sufficient authority to warn of the risks of releasing items where reliability may not satisfy customer expectations.

1.4 Is the reliability organisational structure clearly defined?

Again, the issue is not so much what the structure is, but whether that structure is defined and known to all involved. Organisational charts should clearly indicate the division of responsibilities.

1.5 Who has responsibilities for liaison with customers on reliability issues?

It is important that all customer needs are understood and communicated to the design and production teams. There is a particular difficulty with reliability since each market tends to have very specific requirements. The reliability of components supplied to a given customer depends not just upon the system's electrical and mechanical design, but also upon the environment in which it will work.

The relevant experience necessary to perform this function includes:

- a) An understanding of the product, processes and typical failure mechanisms.
- b) An understanding of typical customer requirements and field conditions.

1.6 How are the reliability functions integrated?

It is vital that reliability functions are an integral activity with all design and manufacturing processes. This is particularly important where a separate group exists which provides the reliability expertise because only by good engineering will high reliability be achieved. Similarly, there is a close relationship between quality and reliability and it may be beneficial in some cases for quality and reliability plans to be combined so that possible duplications and/or confusions are avoided.

1.7 Who has responsibility for reliability verification?

Within the organisation consideration should be given to the verification tasks which have to be undertaken to ensure that the delivered products will satisfy its reliability objectives.

2 Quality system (Not applicable)

3 Contract review

NOTE This section only applies to contracts for component development and to production contracts in which the customer has included reliability requirements.

3.1 Are contracts vetted for acceptable reliability clauses?

As stated in 1.5, the first and most significant stage in satisfying a reliability requirement is to understand what those requirements are. At the electronic system level, it is becoming increasingly common for contracts relating to major development projects to include penalty or bonus clauses related to reliability.