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Quality assessment systems –
Part 2: Selection and use of sampling plans for inspection of electronic components and packages

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

QUALITY ASSESSMENT SYSTEMS –

Part 2: Selection and use of sampling plans for inspection of electronic components and packages

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International Standard IEC 61193-2 has been prepared by IEC technical committee 91: Electronics assembly technology.

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

FDIS	Report on voting
91/690/FDIS	91/723/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 the parts in the IEC 61193 series, under the general title *Quality assessment systems*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

To obtain a high quality level of products, process controls like 100 % testing of significant characteristics and statistical methods are needed to stabilize, monitor, and improve processes.

Sampling inspection is one of the methods to verify

- whether the process control is effective, and
- the quality level of a supplier's product by a customer or third party.

Today the quality level of products for use in electric and electronic equipment is expected to be equal or close to zero defects. But, the assessment of a quality level close to zero defects by sampling only would lead to an unreasonable increase of cost for inspection. A combination of process control and zero acceptance number sampling plans is indispensable.

This standard provides a sampling system and plans for the inspection of electronic components, packages and modules, manufactured under suitable process control, which prevents the outflow of nonconforming products.

NOTE The sampling system provided by this standard is extracted from ISO 2859-1, and is intended to be used for the inspection of final products, either by the manufacturer, a customer, or a third party.

QUALITY ASSESSMENT SYSTEMS –

Part 2: Selection and use of sampling plans for inspection of electronic components and packages

1 Scope

This part of IEC 61193 applies to the inspection of electronic components, packages, and also modules (referred to as “products” in this standard) for use in electronic and electric equipment. It specifies sampling plans for inspection by attributes on the assumption that the acceptance number is zero (Ac = 0), including criteria for sample selection and procedures.

The zero acceptance number sampling plans provided by this standard apply to the inspection of products, that are manufactured under suitable process control with the target of a “zero-defect” quality level before sampling inspection.

In addition, this standard provides a method for the calculation of the expected value of the statistical verified quality limit (SVQL) at a confidence level of 60 %. Amongst other things, this method can be used to verify the effectiveness of the supplier’s process control.

NOTE In this standard the term “module” is used for products which are modules according to the definition in IEC 60194.

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*

ISO 2859-1:1999, *Sampling procedures for inspection by attributes – Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 3534-2:2006, *Statistics – Vocabulary and symbols – Part 2: Applied statistics*