
**Combined accept-zero sampling systems
and process control procedures for
product acceptance**

*Systèmes d'échantillonnage de tolérance zéro-défaut et procédures de
maîtrise des processus combinés pour l'acceptation de produits*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

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Introduction

Enlightened quality-based management practices encourage industry innovation and provide flexibility to achieve the benefits of continuous improvement. There is an evolving industrial product quality philosophy that recognizes the need for quality policy changes that will provide suppliers with opportunities and incentives toward improvement of product quality and cooperative relationships between the supplier and the customer.

Properly employed, process controls and statistical control methods are effective means of preventing nonconformities, controlling quality, and generating information for systematic improvement. An effective process control system may also be used to provide information to assess the quality of deliverables submitted for acceptance. This International Standard encourages suppliers to use process control and statistical control procedures for their internal control and to submit effective process control procedures to the customer for approval, so that the need for acceptance sampling procedures can be reduced or even eliminated.

Sampling inspection by itself can be an inefficient industrial practice for demonstrating conformance. The application of sampling plans for acceptance involves both consumer and producer risks; increased sampling is one way of reducing these risks, but it also increases costs. Suppliers can reduce risks by employing efficient processes with appropriate process controls. To the extent that such practices are properly employed and are effective, risk is controlled and, consequently, inspection and testing can be reduced.

This International Standard supports those whose preference is to move away from an acceptance quality limit (AQL)-based inspection (detection) strategy to implementation of an effective prevention-based strategy including a comprehensive quality management system, continuous improvement and partnering. The underlying theme is cooperation between customer and supplier, with the requisite competence of both parties, and a clear mutual benefit from processes capable of consistently high quality products and services. The objective is to create an atmosphere where every non-compliance is an opportunity for corrective action and improvement, rather than one where AQLs are the contractually sufficient goals.

The following points provide the basis for this International Standard:

- a) suppliers are required to submit deliverables that conform to requirements and to generate and maintain sufficient evidence of conformance;
- b) suppliers are responsible for establishing their own manufacturing and process controls to produce results in accordance with requirements;
- c) suppliers are expected to use recognized prevention practices such as statistical process control.

This International Standard's goal, ideally, is to have product accepted as a result of control procedures. It also, however, provides a set of accept-zero sampling systems (see Annex A) and procedures for planning and conducting inspections to assess quality and conformance to specified requirements. The intent of including provisions for acceptance sampling is as a verification of the efficacy of process controls, or as an interim measure while such controls are being developed and implemented.

When acceptance sampling is conducted using the tables of this International Standard, the supplier has the option to inspect using any one of three types of sampling: single sampling by attributes; single sampling by variables; continuous sampling by attributes. Switching procedures are also provided to allow movement among normal, tightened and reduced inspection severities.

Some organizations have a policy of not using sampling plans indexed by AQLs. This International Standard complies with that policy.

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Combined accept-zero sampling systems and process control procedures for product acceptance

1 Scope

This International Standard provides a set of accept-zero sampling systems and procedures for planning and conducting inspections to assess quality and conformance to specified requirements.

In addition, this International Standard provides requirements for alternative acceptance methods proposed by the supplier. Such alternative methods would be based upon establishing and implementing an internal prevention-based quality management system as a means of ensuring that all products conform to requirements specified by the contract and associated specifications and standards.

This International Standard, when cited in contract, is applicable to the supplier and extends to subcontractors or vendors. The quality plans are to be applied as specified in the contract documents, and deliverables may be submitted for acceptance if the requirements of this International Standard have been met.

Sampling systems and procedures in this International Standard are applicable, when appropriate, to assess conformance to requirements of the following:

- a) end items;
- b) components or basic materials;
- c) operations or services;
- d) materials in process;
- e) supplies in storage;
- f) maintenance operations;
- g) data or records;
- h) administrative procedures.

NOTE Use of the word "product" throughout this International Standard also refers to services and other deliverables.

The sampling systems and procedures of this International Standard are not intended for use with destructive tests or where product screening is not feasible or desirable. In such cases, the sampling systems to be used will be specified in the contract or product 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.

ISO 3534-1:—¹⁾, *Statistics — Vocabulary and symbols — Part 1: Probability and general statistical terms*

ISO 3534-2:—²⁾, *Statistics — Vocabulary and symbols — Part 2: Applied statistics*

ISO 9000:2000, *Quality management systems — Fundamentals and vocabulary*

1) To be published. (Revision of ISO 3534-1:1993)

2) To be published. (Revision of ISO 3534-2:1993)