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Guidance on the selection and usage of acceptance sampling systems for inspection of discrete items in lots —

Part 1: Acceptance sampling

*Lignes directrices pour la sélection d'un système, d'un programme ou
d'un plan d'échantillonnage pour acceptation pour le contrôle d'unités
discrètes en lots —*

*Partie 1: Lignes directrices générales pour l'échantillonnage pour
acceptation*



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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.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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.

ISO/TR 8550-1 was prepared by Technical Committee ISO/TC 69, *Applications of statistical methods*, Subcommittee SC 5, *Acceptance sampling*.

This first edition of ISO/TR 8550-1, together with ISO/TR 8550-2 and ISO/TR 8550-3, cancels and replaces ISO/TR 8550:1994.

ISO/TR 8550 consists of the following parts, under the general title *Guidance on the selection and usage of acceptance sampling systems for inspection of discrete items in lots*:

— *Part 1: Acceptance sampling*

— *Part 3: Sampling by variables*

The following part is under preparation:

— *Part 2: Sampling by attributes*

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Introduction

This part of ISO/TR 8550 gives guidance on the selection of an appropriate acceptance sampling scheme for the inspection of discrete items submitted in lots from the schemes described in various national and international standards.

There are many situations where products (materials, parts, components, assemblies and systems) are transferred from one organization to another, where the organizations may be different companies or parts of a single company or even different shops within a plant. In these situations both the supplier and the customer may use acceptance sampling procedures to satisfy themselves that the product is of acceptable quality. Suppliers will be seeking to maintain a reputation for good quality and to reduce the likelihood of claims under warranty, but without incurring unnecessary production and supply costs. On the other hand, customers will require adequate evidence, at minimum cost to themselves, that the product they receive conforms to specifications. Compared with, say, 100 % inspection, suitable sampling methods will often be beneficial in achieving these aims. Sometimes acceptance sampling methods are the only practical procedure, especially when the tests for conformance are destructive.

Several types of sampling systems, schemes and plans are available for these purposes. They are presented in a number of ISO Standards that explain how they are to be used. However, it is often difficult to decide on the most appropriate procedure for use in a particular situation. The purpose of this part of ISO/TR 8550 is to assist in that decision.

The choice of sampling system, scheme or plan depends on a number of conditions and on the prevailing circumstances. In any supply situation, the first essential is that the supplier and the customer understand, and have agreed upon, the requirements and the basis for release and acceptance of the product, including any acceptance sampling methods to be used.

Lots that are non-acceptable cause difficulties for both supplier and customer. The supplier incurs additional costs in rework, scrap, increased inspection, damage to reputation and possibly loss of sales. Delays in delivery and re-inspection costs are a burden to the customer. For these reasons, it is usually considered essential for the supplier to provide lots that have a very high probability of being accepted, i.e. 95 % or more. The supplier has to ensure that quality control of the production or delivery process provides lots of a quality sufficient to meet this objective. A basic principle of some acceptance sampling inspection schemes is to promote the production of lots of acceptable quality. The primary purpose of these schemes is not to discriminate between acceptable and non-acceptable lots, i.e. to sort, but to keep production under control to yield an acceptable process average quality. Although all acceptance sampling plans are discriminatory to some degree, the process average quality (expressed in terms of percent nonconforming or number of nonconformities) should not be greater than half the acceptance quality limit in order to ensure a very high probability of acceptance.

The primary purpose of the ISO/TR 8550 series is to give guidance on the selection of an acceptance sampling system, scheme or plan. It does this principally by reviewing the available systems specified by various standards and showing ways in which these can be compared in order to assess their suitability for an intended application. The guide also indicates how prior knowledge of the manufacturing or service delivery process and quality performance might influence the choice of sampling system, scheme or plan, and likewise how the particular needs of the customer affect selection. Some specific circumstances encountered in practice are described and the method of choosing a plan is explained. Some checklists or pointers and tables are provided to assist users in selecting an appropriate system, scheme or plan for their purposes. Charts are included to illustrate the procedures to be followed in the selection process.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.