
International Standard



2859/2

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Sampling procedures for inspection by attributes — Part 2: Sampling plans indexed by limiting quality (LQ) for isolated lot inspection

Règles d'échantillonnage pour les contrôles par attributs — Partie 2: Plans d'échantillonnage pour les contrôles de lots isolés, indexés d'après la qualité limite (QL)

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 2859/2 was prepared by Technical Committee ISO/TC 69, *Applications of statistical methods*. It replaces, in part, the first edition of ISO 2859, published in 1974.

NOTE — ISO 2859/2 was originally circulated as ISO/DIS 7362.

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Sampling procedures for inspection by attributes —

Part 2: Sampling plans indexed by limiting quality (LQ) for isolated lot inspection

0 Introduction

0.1 General

ISO 2859 comprises four parts:

Part 0: General introduction.

Part 1: Sampling plans indexed by acceptable quality level (AQL) for lot-by-lot inspection.

Part 2: Sampling plans indexed by limiting quality (LQ) for isolated lot inspection.

Part 3: Skip lot sampling plan.

ISO 2859/1 sampling plans, indexed in terms of AQL, which is defined as a process average, were primarily designed for the assessment of a continuing series of lots. This enables switching rules to be employed which not only give protection to the consumer (by the switch to tightened inspection and discontinuation where necessary) but also provide an incentive to the producer (by the switch to reduced inspection) with a reduction to test and inspection costs (when consistently good quality is achieved). However, there is little doubt that in many industrial situations today the switching rules are not applied for a variety of reasons or excuses, not all of which may be valid:

- a) individual ISO 2859/1 plans are used alone but "AQL" protection is still claimed or AQL re-defined, to suit "so-called unique products";
- b) "our industry... product is special so ISO 2859/1 standard plans need not apply to us";
- c) production is intermittent (not continuous);
- d) production is from several different sources in varying quantities, i.e. "job lots";
- e) purchases are from stock-holders — no source data available;
- f) lots are "small" (use of hypergeometric distribution required);
- g) lots are "isolated";
- h) lots are re-submitted after initial rejection.

Consequently, in certain of the above cases consumer protection may need to be attained or measured by other methods. This part of ISO 2859 uses the limiting quality to measure consumer protection. It should be remembered, however, that prior information on the supplier's quality assurance system and its effectiveness may play a major part in deciding whether or not to accept a single lot.

0.2 Objectives

In an attempt to reconcile the somewhat diverse requests for assistance made over the past few years by committees of international standardizing bodies representing various product sectors, this part of ISO 2859 was drawn up in accordance with the following principles:

- a) the new LQ plans can be easily integrated with the existing AQL plans in ISO 2859/1;
- b) the LQ indexing uses a preferred series of values that cannot be confused with the preferred series of AQL values;
- c) the five basic numbers associated with a single sampling plan, i.e. lot size, sample size, acceptance number, AQL (or quality accepted with probability 0,95) and LQ, appear in the same table, whenever possible.

0.3 Summary

The problems associated with acceptance sampling inspection involve defining unambiguously the criteria used to judge discrete individual items supplied in quantity, the quality level expected from the manufacturing process, the discrimination offered by the plans and the procedure to be followed when a lot is not accepted. Above all, however, it is necessary to design the sampling scheme so that it may easily be invoked in a purchasing contract. The plans in this part of ISO 2859 make maximum use of the established plans given in ISO 2859/1, so that sub-clause 12.6 of ISO 2859/1 (see 1.1) can be made directly operational, by providing a rationalized series of plans indexed in terms of limiting quality (LQ).