AS 1199.4—2003
ISO 2859-4:2002



Australian Standard™

# Sampling procedures for inspection by attributes

## Part 4: Procedures for assessment of declared quality levels

Standards Australia

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# PREFACE

This Standard was prepared by the Standards Australia Committee QR-008, Quality Systems.

This Standard is identical with, and has been reproduced, from ISO 2859-4:2002, *Sampling procedures for inspection by attributes,* Part 4: *Procedures for assessment of declared quality levels.*

The objective of this Standard is to establish sampling plans and procedures that can be used to assess whether the quality level of an entity (lot, process, etc.) conforms to a declared value.

As this Standard is reproduced from an international standard, the following applies:

(a) Its number appears on the cover and title page while the international standard number appears only on the cover.

(b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

| *Reference to International Standard* | | *Australian/New Zealand Standard* | |
|---|---|---|---|
| ISO | | AS/NZS ISO | |
| 9000 | Quality management systems—Fundamentals and vocabulary | 9000 | Quality management systems—Fundamentals and vocabulary |

Only International Standard referenced documents identical to Australian Standards have been listed.

The term ‘informative’ has been used in this Standard to define the application of the annex to which it applies. An ‘informative’ annex is only for information and guidance.

The International Organization for Standardization’s Committee TC 69 is currently in the process of updating the ISO 2859 series to bring the older documents into line with Parts 1 and 4. Where any inconsistency arises between the sections of this series of Standards, the more recently published document will apply.

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# INTRODUCTION

The procedures in this part of ISO 2859 differ in their scope from the procedures in ISO 2859 Parts 1 to 3. The system of acceptance sampling procedures that are specified in ISO 2859 Parts 1 to 3 are intended to be used in bilateral agreements between two parties. The acceptance sampling procedures are intended to be used as simple, pragmatic rules for releasing product after inspection of only a limited sample of a consignment, and therefore the procedures do not make reference (either explicitly or implicitly) to any formally declared quality level.

Under acceptance sampling there is no sharp borderline between quality levels that should be considered acceptable and qualities that should be rejected by the procedure. For the procedures in ISO 2859-1 the two parties agree upon some acceptance quality limit (AQL) which is the worst tolerable process average when a continuing series of lots is submitted. The switching rules and the sampling schemes in ISO 2859-1 are designed to encourage the suppliers to have process averages consistently better than the AQL selected. In order to keep sample sizes moderate, the protection against accepting individual lots of inferior quality may be less than that provided by sampling plans targeted for sentencing individual lots. The procedures in ISO 2859-2, on the contrary, are designed to provide good protection against accepting individual lots of inferior quality (LQ), but at the expense of a possible high risk of not accepting lots of qualities that both parties actually would consider to be acceptable.

Procedures in ISO 2859 Parts 1 to 3 are well suited for acceptance sampling purposes, but they should not be used in reviews, audits, etc. to verify a quality that has been declared for some entity. The main reason is that the procedures have been indexed in terms of quality levels that are relevant solely for the pragmatic purposes of acceptance sampling, and the various risks have been balanced accordingly.

The procedures in this part of ISO 2859 have been developed as a response to the growing need for sampling procedures suitable for formal, systematic inspections such as reviews or audits. When performing such a formal inspection, it is necessary for the authority to consider the risk of reaching an incorrect conclusion, and to take this risk into account in planning and executing the review/audit/testing, etc.

This part of ISO 2859 provides guidance and rules to assist the user in taking this risk into account in an informed manner.

The rules in this part of ISO 2859 have been devised such that there is only a small, limited risk of contradicting the declared quality level when in fact the actual level conforms to the declared level.

If it were also desired that there should be a similarly small risk of not contradicting the declared quality level when in fact the actual quality level does not conform to the declared quality level, then it would be necessary to investigate a rather large sample. Therefore, in order to obtain the benefit of a moderate sample size, the procedures in this part of ISO 2859 have been devised in such a way that they allow a somewhat higher risk of failing to contradict the declared quality level when in fact the actual quality level does not conform to the declared quality level.

The wording of the result of the assessment should reflect this unbalance between the risks of reaching incorrect conclusions.

When the sample result contradicts the declared quality level *there is strong evidence of nonconformance to the declared quality level*.

When the sample result does not contradict the declared quality level, this should be understood as “we have not, in this limited sample, found strong evidence of nonconformance to the declared quality level”.

AUSTRALIAN STANDARD

# Sampling procedures for inspection by attributes —

# Part 4:
# Procedures for assessment of declared quality levels

## 1 Scope

This part of ISO 2859 establishes sampling plans and procedures that can be used to assess whether the quality level of an entity (lot, process, etc) conforms to a declared value. The sampling plans have been devised so as to obtain a risk of less than 5 % of contradicting a correct declared quality level. The risk is 10 % of failing to contradict an incorrect declared quality level which is related to the limiting quality ratio (see clause 4). Sampling plans are provided corresponding to three levels of discriminatory ability.

In contrast to the procedures in the other parts of ISO 2859, the procedures in this part of ISO 2859 are not applicable to acceptance assessment of lots. Generally, the balancing of the risks of reaching incorrect conclusions in assessment procedures will differ from the balancing in the procedures for acceptance sampling.

This part of ISO 2859 may be used for various forms of quality inspection in situations where objective evidence of conformity to some declared quality level is to be provided by means of inspection of a sample. The procedures are applicable to entities such as lots, process output, etc. that allow random samples of individual items to be taken from the entity.

The sampling plans provided in this part of ISO 2859 are applicable, but not limited, to inspection of a variety of products such as

— end items;

— components and raw materials;

— operations;

— materials in process;

— supplies in storage;

— maintenance operations;

— data or records;

— administrative procedures.

The procedures are primarily intended to be used when the quantity of interest is the number or fraction of nonconforming items for which the inspected items are classified as conforming or nonconforming.

With minor changes, the procedures may also be used when the quantity of interest is the number of nonconformities or number of nonconformities per item. The necessary changes are:

— replacement of “number of nonconforming items” by “number of nonconformities”;

— replacement of “percent nonconforming items” by “nonconformities per 100 items”.

In this case the values given in Tables 2 to 7 are only approximations.