

Sampling procedures for inspection by attributes —

Part 7: Credit-based accept-zero sampling schemes for the control of outgoing quality for lot-by-lot inspection

ICS 03.120.30

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee SS/5, Acceptance sampling schemes, upon which the following bodies were represented:

- BEAMA Limited
- British Measurement and Testing Association
- British Standards Society
- City University
- Clay Pipe Development Association Limited
- General Domestic Appliances Limited
- Institute of Metal Finishing
- Institute of Quality Assurance

This British Standard, having been prepared under the direction of the Management Systems Sector Committee was published under the authority of the Standards Committee and comes into effect on 15 June 2001

© BSI 06-2001

Amendments issued since publication

Amd. No.	Date	Comments

The following BSI references relate to the work on this British Standard:
Committee reference SS/5

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 Normative references	1
3 Terms, definitions, symbols and abbreviations	1
4 Average outgoing quality limit	2
5 The credit principle	2
6 The treatment of non-accepted lots	3
7 The sampling plans	3
8 Preliminary operations	3
9 Standard procedure	4
10 Procedure during continuing inspection	6
11 Discontinuation of inspection	6
Annex A (informative) Examples of sample sizes required for credit-based accept-zero plans	7
Bibliography	8
Table A.1 — Examples of largest required sample sizes and corresponding lot sizes at selected AOQLs	7
Table A.2 — Examples of sample size reduction at AOQL 1 % for series of lots of constant size	7
Figure 1 — Flow chart showing the standard procedure	5

Foreword

This British Standard is published under the authority of BSI Technical Committee SS/5, Acceptance sampling schemes.

This British Standard is based upon the ISO work item proposal ISO/TC 69/N 524, which was circulated in July 2000. The proposal, which was submitted by the UK Technical Committee, was not approved by ISO under the ISO/IEC Directives, part 1, 1995, **2.3.5**.

Annex A is informative.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

1 Scope

This British Standard specifies an acceptance sampling system for lot-by-lot inspection by attributes. All sampling plans of the system are for nonconforming items and are of the accept-zero form, i.e. no lot is accepted if the sample from it contains one or more nonconforming items.

This British Standard is only applicable when inspection is non-destructive.

The objective of this standard is to provide accept-zero schemes and procedures for ensuring, by means of the lowest practicable sample sizes, an upper limit to the long-term percentage of nonconforming items delivered to the market-place, i.e. a suitably defined average outgoing quality limit (AOQL). This objective is achieved by a progressive reduction of the sample size in response to good quality history, reversion to a relatively large sample size whenever a nonconforming item is found, and 100 % inspection of:

- a) the first lot if it is non-accepted; or
- b) any non-accepted lot that immediately follows a non-accepted lot, with acceptance of any conforming items found in those lots.

NOTE The AOQL protection is only guaranteed if the classification of the sampled items as conforming or nonconforming is error-free.

No restrictions are placed on the choice of AOQL, or on the sizes of successive lots in the series.

This British Standard is designed for use under conditions where:

- a) items are of a similar type and value, all supplied by the same supplier;
NOTE Where suppliers differ, this standard should be applied to the lots from each supplier separately.
- b) the cost to the supplier for inspection increases with the number of items inspected and the cost of inspection of each item;
- c) it is possible to accurately determine whether or not the sampled items conform to specifications.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of this British Standard. For these references, the latest edition of the publication referred to applies.

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

BS ISO 3534-2, *Statistics — Vocabulary and symbols — Part 2: Statistical quality control*.

3 Terms, definitions, symbols and abbreviations

For the purpose of this standard, the terms and definitions given in ISO 3534-1 and ISO 3534-2 and the following apply.

3.1 Terms and definitions

3.1.1

credit

K

total number of items accepted in a sequence of lots since a lot in the sequence was non-accepted, or since the start of inspection if all previous inspected lots have been accepted

3.1.2

average outgoing quality

AOQ

⟨acceptance sampling⟩ expected average quality level of outgoing product for a sequence of lots of given sizes and quality levels

NOTE Different definitions of AOQ are used depending on whether or not nonconforming items removed in the 100 % inspection of non-accepted lots are replaced by conforming items. This British Standard is based on the assumption that every lot that fails to satisfy the acceptance criterion, when the credit is zero, is 100 % inspected; in such lots every conforming item is accepted and every nonconforming item is scrapped and returned to the producer and not replaced.