INTERNATIONAL STANDARD

ISO 28593

First edition
2017-10

Acceptance sampling procedures by attributes — Accept-zero sampling system based on credit principle for controlling outgoing quality

Procédures d'échantillonnage par attributs pour acceptation — Système d'échantillonnage de tolérance zéro-défaut basé sur le principe de crédit pour le contrôle de la qualité à la sortie

Reference number
ISO 28593:2017(E)

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword ..... **iv**
1 Scope **1**
2 Normative references **2**
3 Terms and definitions **2**
4 Symbols and abbreviated terms **2**
5 Average outgoing quality limit **3**
6 Credit principle **3**
7 Treatment of non-accepted lots **4**
8 Sampling plans **4**
9 Preliminary operations **4**
10 Standard procedure **5**
11 Procedure during continuing inspection **6**
12 Discontinuation of inspection **6**
Annex A (informative) **Examples of sample sizes required for credit-based accept-zero plans** **8**
Bibliography **9**

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 69, *Applications of statistical methods*, Subcommittee SC 5, *Acceptance sampling*.

This first edition of ISO 28593 cancels and replaces ISO 18414:2006, of which it constitutes a minor revision to change the reference number from 18414 to 28593.

With the view to achieve a more consistent portfolio, TC 69/SC 5 has simultaneously renumbered the following standards, by means of minor revisions:

Old reference	New reference	Title
ISO 2859-10:2006	ISO 28590:2017	Sampling procedures for inspection by attributes — Introduction to the ISO 2859 series of standards for sampling for inspection by attributes
ISO 8422:2006	ISO 28591:2017	Sequential sampling plans for inspection by attributes
ISO 28801:2011	ISO 28592:2017	Double sampling plans by attributes with minimal sample sizes, indexed by producer's risk quality (PRQ) and consumer's risk quality (CRQ)
ISO 18414:2006	ISO 28593:2017	Acceptance sampling procedures by attributes — Accept-zero sampling system based on credit principle for controlling outgoing quality
ISO 21247:2005	ISO 28594:2017	Combined accept-zero sampling systems and process control procedures for product acceptance

ISO 14560:2004	ISO 28597:2017	Acceptance sampling procedures by attributes — Specified quality levels in nonconforming items per million
ISO 13448-1:2005	ISO 28598-1:2017	Acceptance sampling procedures based on the allocation of priorities principle (APP) — Part 1: Guidelines for the APP approach
ISO 13448-2:2004	ISO 28598-2:2017	Acceptance sampling procedures based on the allocation of priorities principle (APP) — Part 2: Coordinated single sampling plans for acceptance sampling by attributes

Cross references between the above listed documents have been corrected in the minor revisions.

A list of all documents in the new ISO 28590 - ISO 28599 series of International Standards can be found on the ISO website.

Acceptance sampling procedures by attributes — Accept-zero sampling system based on credit principle for controlling outgoing quality

1 Scope

1.1 This International Standard specifies a system of single sampling schemes for lot-by-lot inspection by attributes. All the sampling plans of the present system are of accept-zero form, i.e. no lot is accepted if the sample from it contains one or more nonconforming items. The schemes depend on a suitably-defined average outgoing quality limit (AOQL), the value of which is chosen by the user; no restrictions are placed on the choice of the value of the AOQL or on the sizes of successive lots in the series. The methodology ensures that the overall average quality reaching the customer or market-place will not exceed the AOQL in the long run.

1.2 The schemes are intended to induce a supplier, through the economic and psychological pressure of lot non-acceptance and consequent loss of accumulated credit, to attempt to maintain a nonconformity-free process, while assuring, by means of the lowest practicable sample sizes, that the long-term percentage of nonconforming items delivered to the customer or market-place does not exceed the AOQL. This objective is achieved by a progressive reduction in the sample size in response to good quality history.

1.3 The schemes are designed to be applied to a series of lots from each supplier. The credit principle provides:

a) automatic protection to the customer if a deterioration in quality is detected, by means of a total loss of accumulated credit and reversion to a relatively large sample size whenever a nonconforming item is found, and 100 % inspection of

   1) the first lot if it is not accepted, or

   2) any non-accepted lot that immediately follows a non-accepted lot;

b) an incentive to reduce sampling costs (by means of a progressive reduction in required sample size) if consistently good quality is achieved.

1.4 This International Standard is designed for use under the following conditions:

a) where the inspection procedure is to be applied to a series of lots of discrete items that are intended to be identical, and which are all supplied by one producer using one production process (If there are different producers or production processes, this International Standard is intended to be applied to each one separately.);

b) where one or more quality characteristics of these products are taken into consideration, which must all be classifiable as either conforming or nonconforming;

c) where the inspection error involved in classifying the state of a product's quality characteristic(s) is negligible;

d) where inspection is non-destructive.

This International Standard can be suitable for regulatory purposes, as control of the *expected* quality of items reaching the market-place is achieved with the smallest possible sample sizes, and long-term control of the *realized*, or *actual* quality level in the market-place is achieved with certainty, regardless of how long or short individual suppliers' series may be. This International Standard can be used by