


AMERICAN NATIONAL STANDARD

SAMPLING PROCEDURES AND TABLES FOR INSPECTION BY ATTRIBUTES



**AMERICAN SOCIETY FOR QUALITY
600 NORTH PLANKINTON AVENUE
MILWAUKEE, WISCONSIN 53203**

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Sampling Procedures and Tables for Inspection by Attributes

Prepared by
The Statistics Subcommittee of the Accredited
Standards Committee Z1 on Quality, Environment,
Dependability and Statistics

Secretariat
American Society for Quality

Abstract

Sampling Procedures and Tables for Inspection by Attributes is an acceptance sampling system to be used with switching rules on a continuing stream of lots for AQL specified. It provides tightened, normal, and reduced plans to be applied for attributes inspection for percent nonconforming or nonconformities per 100 units.

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Foreword

(This foreword is not a part of the American National Standard—*Sampling Procedures and Tables for Inspection by Attributes*, Z1.4-2003)

This standard is a revision of ANSI/ASQC Z1.4-1993, "Sampling Procedures and Tables for Inspection by Attributes." Beyond editorial refinements, only the following eight changes have been made:

- 1) Acceptable Quality Level (AQL) has been changed to Acceptance Quality Limit (AQL). See Clause 4.
- 2) The definition and explanation of AQL have been changed. See Clauses 4.2 and 4.3.
- 3) The Discontinuation of Inspection rule has been changed. See Clause 8.4.
- 4) ANSI/ASQC A2-1987 has been changed to ANSI/ASQ A3534-2-1993. See Clauses 2 and 7.2.
- 5) ANSI/ASQC Q3 has been changed to ASQC Q3-1988. See Clause 11.6.3.

6) The connected arrows in Table II-A, III-A, III-C, IV-A, and IV-C have been separated.

7) In Tables III-A, III-B, and III-C and for clarification of instructions, the * footnote has changed and the + footnote added.

8) In Tables IV-A, IV-B, and IV-C and for clarification of instructions, the footnotes * and ++ have changed and the footnote ## added.

Note 1: Other than 3), 7), and 8) above, all tables, table numbers and procedures used in MIL-STD-105E (which was cancelled in 1995) have been retained.

Note 2: A compatible and interchangeable standard for variables inspection is ANSI/ASQC Z1.9-2003.

Suggestions for improvement of this standard are welcomed. Send your comments to the sponsor, ASQ, 600 North Plankinton Avenue, Milwaukee, WI 53203.

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SAMPLING PROCEDURES AND TABLES FOR INSPECTION BY ATTRIBUTES

1. SCOPE

1.1 PURPOSE. This publication establishes sampling plans and procedures for inspection by attributes. When specified by the responsible authority, this publication shall be referenced in the specification, contract, inspection instructions, or other documents and the provisions set forth herein shall govern. The “responsible authority” shall be designated in one of the above documents, as agreed to by the purchaser and seller or producer and user.

1.2 APPLICATION. Sampling plans designated in this publication are applicable, but not limited, to inspection of the following:

- a. End items.
- b. Components and raw materials.
- c. Operations.
- d. Materials in process.
- e. Supplies in storage.
- f. Maintenance operations.
- g. Data or records.
- h. Administrative procedures.

These plans are intended primarily to be used for a continuing series of lots or batches. The plans may also be used for the inspection of isolated lots or batches, but, in this latter case, the user is cautioned to consult the operating characteristic curves to find a plan which will yield the desired protection (see 11.6).

1.3 INSPECTION. Inspection is the process of measuring, examining, testing, or otherwise comparing the unit of product (see 1.5) with the requirements.

1.4 INSPECTION BY ATTRIBUTES. Inspection by attributes is inspection whereby either the unit of product is classified simply as conforming or nonconforming, or

the number of nonconformities in the unit of products is counted, with respect to a given requirement or set of requirements.

1.5 UNIT OF PRODUCT. The unit of product is the unit inspected in order to determine its classification as conforming or nonconforming or to count the number of nonconformities. It may be a single article, a pair, a set, a length, an area, an operation, a volume, a component of an end product, or the end product itself. The unit of product may or may not be the same as the unit of purchase, supply, production, or shipment.

2. DEFINITIONS AND TERMINOLOGY

The definitions and terminology employed in this standard are in accord with ANSI/ASQ A3534-2-1993 (Terms, Symbols, and Definitions for Acceptance Sampling). The following two definitions are particularly important in applying the standard.

DEFECT: A departure of a quality characteristic from its intended level or state that occurs with a severity sufficient to cause an associated product or service not to satisfy intended normal, or foreseeable, usage requirements.

NONCONFORMITY: A departure of a quality characteristic from its intended level or state that occurs with severity sufficient to cause an associated product or service not to meet a specification requirement.

These acceptance sampling plans for attributes are given in terms of the percent or proportion of product in a lot or batch that depart from some requirement. The general terminology used within the document will be given in terms of percent of nonconforming units or number of nonconformities, since these terms are likely to constitute the most widely used criteria for acceptance sampling.

In the use of this standard it is helpful to distinguish between:

- a. an individual sampling plan—a specific plan that states the sample size or sizes to be used, and the associated acceptance criteria.