MALAYSIAN STANDARD

MS ISO 3951-1:2007

SAMPLING PROCEDURES FOR INSPECTION BY VARIABLES – PART 1: SPECIFICATION FOR SINGLE SAMPLING PLANS INDEXED BY ACCEPTANCE QUALITY LIMIT (AQL) FOR LOT-BY-LOT INSPECTION FOR A SINGLE QUALITY CHARACTERISTIC AND A SINGLE AQL (FIRST REVISION) (ISO 3951-1:2005, IDT)

ISO 3951-1:2005 is endorsed as Malaysian Standard with the reference number MS ISO 3951-1:2007.

ICS: 03.120.30

Descriptors: sampling procedures, single sampling plans, acceptance quality limit (AQL), lot-by-lot inspection, single quality characteristic, single AQL

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The Quality Management System Industry Standards Committee (ISC Y) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

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Federation of Malaysian Manufacturers

Institute Quality Malaysia

Lembaga Pembangunan Industri Pembinaan Malaysia

Malaysian Agricultural Reasearch and Development institute

Malaysian Automotive Association

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The Technical Committee on Statistical Methods which recommends adoption of the ISO Standard consists of representatives from the following organisations:

Department of Statistics Malaysia

Institut Kimia Malaysia

Institute Quality Malaysia

Malaysian Agricultural Research and Development Institute

Malaysian Institute of Purchasing and Materials Management

Ministry of Defence (Science and Technology Research Institute for Defence)

Motorola Malaysian Sdn Bhd

National Productivity Centre

SIRIM Berhad (National Metrology Laboratory)

SIRIM Berhad (Secretariat)

SIRIM QAS International Sdn Bhd (Quality System Certification Unit)

The Institution of Engineers, Malaysia

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Universiti Teknologi MARA

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NATIONAL FOREWORD

The adoption of the ISO Standard as a Malaysian Standard was recommended by the Technical Committee on Statistical Methods under the authority of the Quality Management System Industry Standards Committee.

This Malaysian Standard is the first revision of MS ISO 3951:1989, *Sampling procedures and charts for inspection by variables for percent nonconforming.*

This Malaysian Standard is identical with ISO 3951-1:2005, *Sampling procedures for inspection by variables – Part 1: Specification for single sampling plans indexed by acceptance quality limit (AQL) for lot-by-lot inspection for a single quality characteristic and a single AQL,* published by the International Organization for Standardization (ISO). However, for the purposes of this Malaysian Standard, the following apply:

a) in the source text, "this International Standard" should read "this Malaysian Standard";

b) the comma which is used as a decimal sign (if any), to read as a point; and

c) references to International Standards should be replaced by equivalent Malaysian Standards as follows:

Referenced International Standards	Corresponding Malaysian Standards
ISO 2859-1:199, *Sampling procedures for inspection by attributes – Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*	MS ISO 2859-1:2001, *Sampling procedures for inspection by attributes – Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*
ISO 3534-1:1993, *Statistics - Vocabulary and symbols – Part 1: Probability and general statistical terms*	MS ISO 3534-1:1999, *Statistics – Vocabulary and symbols – Part 1: Probability and general statistical terms*
ISO 3534-2:1993, *Statistics – Vocabulary and symbols – Part 2: Statistical quality control*	MS ISO 3534-2, *Statistics - Vocabulary and symbols – Part 2: Statistical quality control*

This Malaysian Standard cancels and replaces MS ISO 3951:1994.

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

NOTE. IDT on the front cover indicates an identical standard i.e. a standard where the technical content, structure, wording (or is an identical translation) of a Malaysian Standard is exactly the same as in an International Standard or is identical in technical content and structure although it may contain the minimal editorial changes specified in clause 4.2 of ISO/IEC Guide 21-1.

INTERNATIONAL STANDARD

ISO 3951-1

First edition
2005-04-01

Sampling procedures for inspection by variables —

Part 1: Specification for single sampling plans indexed by acceptance quality limit (AQL) for lot-by-lot inspection for a single quality characteristic and a single AQL

Règles d'échantillonnage pour les contrôles par mesures —

Partie 1: Spécifications pour les plans d'échantillonnage simples indexés d'après le niveau de qualité acceptable (NQA) pour le contrôle lot par lot pour une caractéristique de qualité unique et un NQA unique

Reference number
ISO 3951-1:2005(E)

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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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 3951-1 was prepared by Technical Committee ISO/TC 69, *Applications of statistical methods*, Subcommittee SC 5, *Acceptance sampling*.

This first edition of ISO 3951-1 cancels and replaces ISO 3951:1989, of which it constitutes a technical revision. The most significant differences between ISO 3951-1:2003 and ISO 3951:1989 are as follows.

— The acronym AQL now stands for Acceptance Quality Limit rather than Acceptable Quality Level, in order to reflect more accurately its function.

— The coverage of this part of ISO 3951 is constrained to a single, normally distributed variable with a single class of nonconformity. This part of ISO 3951 includes the case of combined control of double specification limits, but procedures for separate or complex control of double specification limits are deferred to ISO 3951-2. More general procedures that can be used for multiple characteristics and/or multiple AQLs are also given in ISO 3951-2.

— The plans have been modified so that their operating characteristic curves more closely match those of the plans in ISO 2859-1. The sample sizes for both the "s" method and the "σ" method are constant along rows of the master tables.

— All acceptability constants (see Annexes B, C, G and I) have been revised and tabulated to three decimal places for an extended range of AQLs corresponding to ISO 2859-1:1999.

— All tabulated values of operating characteristics have been recalculated and related directly to reduced inspection as well as to normal and tightened inspection.

— The annex containing the general statistical theory has been removed. It is planned ultimately to reintroduce this within a guidance document to sampling procedures for inspection by variables.

— Tables that are required for implementing the procedures have been relocated into annexes.

— The annex dealing with the "R" method has been eliminated, now that the availability of calculators with a standard deviation function key is so widespread. Data for acceptance sampling by variables is often substantially more expensive to acquire than data for sampling by attributes, and the "s" method makes more efficient use of this data.