ISO 3951-3:2007 Sampling procedures for inspection by variables - Part 3: Double sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection

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Abbreviation
ISO 3951-3:2007
Valid from
26/04/2007

Information provider
Standards New Zealand
Author
International Organization for Standardization
Information type
ISO Standard
Format
PDF

Cited By
This resource is cited by 2 documents (show Citations)

Description

ISO 3951-3:2007 specifies an acceptance sampling system of double sampling schemes for inspection by variables for percent nonconforming. It is indexed in terms of the acceptance quality limit (AQL).

The objectives of the methods laid down in ISO 3951-3:2007 are to ensure that lots of acceptable quality have a high probability of acceptance and that the probability of non-accepting inferior lots is as high as practicable. This is achieved by means of the switching rules, which provide automatic protection to the consumer (by means of a switch to tightened inspection or discontinuation of sampling inspection) should a deterioration in quality be detected, and an incentive (at the discretion of the responsible authority) to reduce inspection costs (by means of a switch to a smaller sample size) should consistently good quality be achieved.

In ISO 3951-3:2007, the acceptability of a lot is implicitly or explicitly determined from an estimate of the percentage of nonconforming items in the process, based on either one or two random samples of items from the lot.

ISO 3951-3:2007 is primarily designed for use under the following conditions: where the inspection procedure is to be applied to a continuing series of lots of discrete products all supplied by one producer using one production process; where the items of product have a single quality characteristic; where the quality characteristic is measurable on a continuous scale; where the measurement error is negligible (i.e. with a standard deviation no more than 10 % of the corresponding process standard deviation); where production is stable (under statistical control) and the quality characteristic is distributed, at least to a close approximation, according to a normal distribution; where the possibility of having to select and inspect a second sample is

administratively acceptable; and where a contract or standard defines an upper specification limit, a lower specification limit, or both on the quality characteristic.

The procedures in ISO 3951-3:2007 are not suitable for application to lots that have been screened previously for nonconforming items.

Scope

This part of ISO 3951 specifies an acceptance sampling system of double sampling schemes for inspection by variables for percent nonconforming. It is indexed in terms of the acceptance quality limit (AQL).

The objectives of the methods laid down in this part of ISO 3951 are to ensure that lots of acceptable quality have a high probability of acceptance and that the probability of non-accepting inferior lots is as high as practicable. This is achieved by means of the switching rules, which provide automatic protection to the consumer (by means of a switch to tightened inspection or discontinuation of sampling inspection) should a deterioration in quality be detected, and an incentive (at the discretion of the responsible authority) to reduce inspection costs (by means of a switch to a smaller sample size) should consistently good quality be achieved.

In this part of ISO 3951, the acceptability of a lot is implicitly or explicitly determined from an estimate of the percentage of nonconforming items in the process, based on either one or two random samples of items from the lot.

This part of ISO 3951 is primarily designed for use under the following conditions:

- a) where the inspection procedure is to be applied to a continuing series of lots of discrete products all supplied by one producer using one production process; if there are different producers or production processes, apply this part of ISO 3951 to each one separately;
- b) where the items of product have a single quality characteristic (for multiple quality characteristics, see informative Annexes A, B and C);
- c) where the quality characteristic is measurable on a continuous scale;
- d) where the measurement error is negligible (i.e. with a standard deviation of no more than 10 % of the corresponding process standard deviation);
- e) where production is stable (under statistical control) and the quality characteristic is distributed, at least to a close approximation, according to a normal distribution;

CAUTION The procedures in this part of ISO 3951 are not suitable for application to lots that have been screened previously for nonconforming items.

- f) where the possibility of having to select and inspect a second sample is administratively acceptable;
- g) where a contract or standard defines an upper specification limit U, a lower specification limit L or both on the quality characteristic.

An item is deemed to conform if its measured quality characteristic x satisfies the appropriate one of the following inequalities:

1. $x \geq L$ (i.e. the lower specification limit is not violated);
2. $x \geq U$ (i.e. the upper specification limit is not violated);
3. $x \geq L$ and x ? U (i.e. neither the lower nor the upper specification limit is violated).

NOTE Inequalities 1) and 2) are called cases with a single specification limit, and 3) is the case with double specification limits. For double specification limits, a further distinction is made between combined control, separate control and complex control, as follows:

- combined control is where a single AQL applies to nonconformity beyond both limits;
- separate control is where separate AQLs apply to nonconformity beyond each of the limits;
- complex control is where one AQL applies to nonconformity beyond the limit that is of greater seriousness, and a larger AQL applies to the total nonconformity beyond both limits.

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This document is CITED BY:

- AS/NZS 1260:2009

  ISO 3951-3:2007 is cited by AS/NZS 1260:2009 PVC-U Pipes and fittings for drain, waste and vent applications

- AS/NZS 3518:2013

  ISO 3951-3:2007 is cited by AS/NZS 3518:2013 Acrylonitrile butadiene styrene (ABS) compounds; pipes and fittings for pressure applications

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