

ICS 03.120.30

CCS A 41



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 6378.5-2025

**Sampling procedures for inspection by variables - Part 5:
Sequential sampling plans indexed by acceptance quality limit
(AQL) for inspection by variables (known standard deviation)
(English Translation)**

Issued on: December 31, 2025

Implemented on: April 1, 2026

Issued by: State Administration for Market Regulation

Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative References	
3 Terms and Definitions	
4 Symbols	
5 Acceptable Quality Limit (AQL)	
5.1 Principle	
5.2 Applications	
5.3 AQL Requirements	
5.4 Prioritize AQL	
5.5 Precautions	
5.6 Restriction	
6 Transfer rules for normal, tightened, and relaxed inspections.	
6.1 General Rules	
6.2 Transfer Rules	
6.3 Suspension and Resumption of Inspections	
Option	
8 Choosing between measurement and counting 7.	
9 Selection of Test Level and AQL 8.	
10 Preparatory Operations	
11 Sampling Plan	
11.1 Inspection Level	
11.2 Sample Size Code	
11.3 Sampling Plan Retrieval	
11.4 Implementation of Sequential Sampling Plan	
12 Additional Information	
12.1 Operating Characteristics (OC) Curve	
12.2 Use of a Single Solution	
13 Example	
14 Use Table	
Appendix A (Normative) Sampling Plans for Normal, Tightened, and Relaxed Inspection	

Appendix B (Normative) Critical Value of Maximum Standard Deviation

Appendix C (Informative) Statistical Characteristics

C.1 Average sample size

C.2 Producer Risk

C.3 Using Table

References

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 5 of GB/T 6378, "Metrological Sampling Inspection Procedures". GB/T 6378 has the following parts published.

---Part 1: Lot-by-lot inspection of a single quality characteristic and a single AQL retrieved by Acceptable Quality Limit (AQL) plan;

---Part 3: Secondary Sampling Plans for Lot-by-Lot Inspection Retrieved by Acceptance Quality Limit (AQL);

---Part 4: Procedures for assessing the claimed quality level of the mean;

---Part 5: Sequential Sampling Inspection Plans Retrieved by Acceptance Quality Limit (AQL) (Standard Deviation Known);

---Part 7: Procedures for assessing the claimed quality level of nonconforming rates.

This document is modified to adopt ISO 3951-5:2006 "Metrological sampling inspection procedures - Part 5: Inspection of samples retrieved by acceptance quality limit (AQL)".

Sequential sampling inspection plan (standard deviation known).

The technical differences between this document and ISO 3951-5:2006, and the reasons therefor, are as follows.

---ISO 2859-1 has been replaced by GB/T 2828.1 (normative reference), and ISO 3534-1 has been replaced by GB/T 3358.1 (normative reference).

GB/T 3358.2 replaced ISO 3534-2, and GB/T 6378.1 replaced ISO 3951-1, to adapt to my country's technical requirements.

Add components to increase operability;

---The AQL corresponding to the code H in paragraph 4 of section 11.1 is at least 1.0 (%),

therefore the AQL specification at test level S-3 is...

The statement "Setting it to 0.65% or lower is invalid" is revised to "The minimum AQL corresponding to the code H is 0.25%, therefore the test will be performed." the statement that "an AQL of 0.15% or lower at level S-3 is invalid" is incorrect.

---Modify "the intercept of the rejection line is $-hR$ " and "the intercept of the receiving line is hA " in section 11.4.6.1 to "the intercept is $-hR\sigma$ " and "the intercept is hA " respectively.

The original text contains an error. " $hA\sigma$ ".

---In section 11.4.9.2, " $RL = g\sigma\sqrt{n} - hR, L\sigma$ " should be changed to " $RL = gL\sigma\sqrt{n} - hR, L\sigma$ ", as the original text contained an error.

---In section 11.4.9.2, " $At, U = gL\sigma\sqrt{n}$ " should be changed to " $At, L = gL\sigma\sqrt{n}$ ", as the original text contained an error.

---In section 11.4.9.3.1, "When the cumulative sample size reaches the truncated sample size n_t , if $Y \leq At, U$, then the batch is not accepted, and the inspection is terminated."

---In section 11.4.9.3.2, "When the cumulative sample size reaches the truncated sample size n_t , if $Y \geq At, L$, then the batch is not accepted, and the inspection is terminated." the original text was incorrect; it should be corrected to "Y Introduction in modern production processes, a high-quality level of 10^{-6} defective products is often desired. In such cases, using conventional..."

Sampling plans for acceptance testing by attributes (such as those provided in GB/T 2828.1) often require very large sample sizes. If measurement acceptance testing is used...

Sampling schemes (such as those provided in GB/T 6378.1) can significantly reduce sample size. However, this is especially true for received products.

Even with extremely high sample quality, the required sample size is still too large. Therefore, it is necessary to use standardized statistical procedures with the smallest possible sample size.

Sequential sampling is the only statistical sampling method that satisfies this need because it is the only one that can satisfy all possible sampling methods with similar statistical properties.

Among sampling schemes, sequential sampling schemes have the smallest average sample size. Therefore, it is essential to provide verification methods commonly used in GB/T 6378.1.

A sequential sampling test scheme that is statistically equivalent to a sampling scheme but requires a significantly smaller average sample size.

The main advantage of sequential sampling is the reduction in average sample size. Average sample size is a factor that must be considered within a given batch or process

quality level.

The weighted average of all possible sample sizes in the sampling scheme is used. Under the premise of equivalent operational characteristics, sequential sampling is superior to single-stage sampling.

The average sample size of this sampling plan is smaller. The sequential sampling plan in this document introduces a truncation rule, limiting the upper limit of the actual number of units tested.

The value is $1.5n_0$, where n_0 is the sample size of the corresponding single sampling scheme.

Other factors to consider include the following.

a) Complexity

Compared to the simple rules of a single sampling scheme, the rules of a sequential sampling scheme are slightly more complex.

b) Variability of the test quantity for a specific batch, since the actual number of units to be inspected is unknown in advance, the organization and implementation of the sequential sampling plan will present some challenges.

It's difficult. For example, the arrangement of inspection procedures.

c) Cost of sampling products If the cost of sampling products at different times is high, then the benefit of a reduced average sample size from a sequential sampling scheme may be negated.

The increase in sampling costs offset this.

d) Duration of the test If the testing time for a single product is long, and multiple products can be tested simultaneously, then the testing time using a sequential sampling scheme is shorter than that using a single sampling scheme.

Using the corresponding single sampling method takes a long time.

e) Intra-batch quality variation If a lot consists of two or more sub-lots from different sources, and there may be substantial differences in quality between the sub-lots, then sequential sampling is appropriate.

The random sampling method is more difficult to draw than the corresponding single sampling method.

Weighing the advantages of a small average sample size in sequential sampling schemes against the aforementioned disadvantages, we can conclude that sequential sampling schemes are only suitable for single...

The testing costs for sample products are relatively high.