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

GB/T 2828.5-2011

**Sampling procedures for inspection by attributes -- Part 5:
System of sequential sampling plans indexed by acceptance
quality limit (AQL) for lot-by-lot inspection**

计数抽样检验程序 第5部分：按接收质量限（AQL）检索的逐批序贯抽样检验系
统

(English Translation)

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References

Foreword

GB/T 2828 "Sampling procedures for inspection" is divided into the following sections.

--- Part 1. by acceptance quality limit (AQL) retrieval batch inspection sampling plan (ISO 2859-1:1999, IDT);

--- Part 2. by limiting quality (LQ) for isolated lot inspection retrieved sampling programs (ISO 2859-2. 1985, NEQ);

--- Part 3. skip-lot sampling procedures (ISO 2859-3:2005, IDT);

--- Part 4. claiming that the level of quality assessment procedures (ISO 2859-4:2002, MOD);

--- Part 5. by acceptance quality limit (AQL) retrieval batch sequential sampling system (ISO 2859-5:2005, IDT);

Part --- Article 10. GB/T 2828 series of standards for sampling count guidelines (ISO 2859-10:2006, MOD);

--- Part 11. Small claims overall level of quality evaluation program (instead of GB/T 15482-1995).

This section GB/T 2828 Part 5.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section identical with the international standard ISO 2859-5:2005 "Sampling procedures for inspection Part 5. by acceptance quality limit (AQL) Searchable batch sequential sampling inspection system. " this part of the application by the National Standardization Technical Committee on statistical methods (SAC/TC21) and focal points.

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Introduction

In contemporary production process, the desired rate of unqualified products often reach a high quality level of 10⁻⁶. In this case, the usual Sampling program (such as sampling plan GB/T 2828.1 provided), often require a very large sample size. Faced with this problem, the user Using a higher probability of miscarriage of justice acceptance sampling plan, or in extreme cases, complete abandonment of acceptance sampling procedures. However, in many cases, still However, acceptance of the need of high-quality products using standardized statistical methods, then we should use the smallest possible amount of sample statistical sampling methods. Sequential Sampling plan is the only statistical sampling method to meet this need, because having similar statistical properties of all possible sampling scheme, Sequential sampling plan has the smallest average sample size. Therefore, it is necessary to give the GB/T 2828.1 commonly used in acceptance sampling plan Statistically equivalent, but the required sample size was significantly smaller average sequential sampling plan.

The main advantage of sequential sampling program is to reduce the average sample size. The average sample size in a given lot or process quality level, the Sampling plan for all possible sample volume weighted average. Under the premise of equivalent operating characteristics, such as a secondary and multiple sampling plan Thus, sequential sampling plan is smaller than the average sample size of a sampling program. Using sequential sampling plan to use two or more times than the sampling plan, the average cost savings of

more. For very good quality batch, sequential sampling plan to save up to 85%, by comparison, subsampling Program can only save 37%, many times (five) sampling plan can save 75%. On the other hand, the use of the secondary, or multiple sequential sampling plan, The granting of a certain quality, the actual inspection unit product number may exceed the sample size n_0 corresponding to a sampling scheme. In Second and multiple sampling plans, the upper limit of the actual inspection unit product number about $1.25n_0$. Classical sequential sampling plan, there is no upper limit, in fact, International inspection unit product can exceed an amount corresponding to a sample program n_0 , even with large quantities of N are equal. The sequential part of the pumping Sample program introduced censored rules limit the number of actual inspection unit product value $1.5n_0$.

Other factors to consider include.

a) simplicity

Compared with the simple rules of a sampling program, the rules of sequential sampling program slightly more complex.

b) the amount of variability in test Specific batch, since the actual inspection unit product number previously unknown organization sequential sampling program implementation there will be some difficulties, for example, test operation flow arrangements.

c) take samples of products costs If a sample of the product higher costs at different times, the average benefit sequential sampling scheme reduces the amount of sample will be sampled fee it is offset by increases.

Duration d) test

If the test of time longer a single product, and a plurality of products can be tested simultaneously, sequential sampling test time is used to program than using A long time should be required of a sampling program.

e) Intra-assay variability of quality If the batch is composed of two or more different sources of sub-batches of composition, and there may be substantive differences between the quality of sub-batches, the sequential sampling program on behalf of the

Table of sample extraction more difficult than the corresponding single sampling plan.

Second, the advantages and disadvantages between multiple sampling program and a sequential sampling plan. Weigh the advantages of small sample size and the average it said disadvantage can draw the following conclusions. Sequential sampling plan applies only to the cost of testing a single sample products relatively expensive scenario.

Once, twice, many times and sequential sampling program type selection should be determined prior to the beginning of the batch tests. During a number of tests, not allowed Type transferred from one type to another sampling scheme, because if the actual inspection results influence the acceptance criteria of selection, sampling plan Operational

characteristics may be dramatic changes.

Despite the sequential sampling plan than the corresponding single sampling program on average more economic sense, but to one specific batch of test, may There will be long-term cumulative number of rejects hovering between acceptance number and rejection number, a large amount of time until the test to be taken for acceptance or rejection determination Situation. When using the graphical method, the above-described situation corresponds to the stepped curve in the indefinite domain random wandering. This scenario is most likely to occur in batches or process quality level (percent nonconforming or defective product number per hundred) close to the receiving line and rejection line slope g 100 times when, where g is the receiving line and rejection line slope.

To avoid the above situation, before the beginning of the sampling should be set a truncated value n_t cumulative sample size, sample size is reached when the cumulative n_t , if Reception of the batch has not yet been determined, the test is terminated, and the rejection number and receive data with Censored Censored batch to determine whether or not the reception.

Despite the truncated sequential sampling plan will lead to changes in operating characteristics, but in this section to determine the operating characteristics of the sequential sampling plan considerations A censored. Censored guidelines are an integral part of this section provides sampling scheme.

Sampling procedures for inspection Part 5. by acceptance quality limit (AQL) retrieval Sequential batch sampling system

1 Scope

This section of the sequential sampling plan is GB/T 2828.1 count supplementary acceptance sampling system.

GB/T 2828.1 acceptance sampling plan is by acceptance quality limit (AQL) to retrieve. Its goal is not to receive the raw batch on the production side to produce economic and psychological pressure to at least maintain it will process an average of reception quality with a predetermined limit as good while to make Using the risk might receive poor quality batches to provide an upper limit.

This section specifies the sampling plan can be used for (but not limited to) the following test.

- Final product;
- Parts and raw materials;
- operating;
- In the article;