



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

GB/T 2007.5-1987

**[Replaced by GB/T 2007.4-2008] General rules for the sampling
and sample preparation of minerals in bulk--Experimental
method for checking the bias of sampling**

**散装矿产品取样、制样通则 取样系统误差校核试验方法
(English Translation)**

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1 Scope of application

This standard applies to systematic error verification tests on sampling methods and sampling devices that require verification. It can also be used for the verification of sample preparation methods and sample division equipment.

2 Referenced standards

GB 2007.1 General rules for the sampling and sample preparation of minerals in bulk - Sampling by manual method

GB 2007.2 General rules for the sampling and sample preparation of minerals in bulk - Sample preparation by manual method

GB 2007.3 General rules for the sampling and sample preparation of minerals in bulk - Experimental method for evaluation of quality variation

GB 2007.4 General rules for the sampling and sample preparation of minerals in bulk - Experimental methods for checking the precision and bias

GB 2008 Method of sampling and sample preparation of fluorspar in bulk

3.1 Accuracy: The degree to which experimental results closely approximate the true

value. The accuracy of a method is a measure of its ability to provide true results.

3.2 Particle size-component index: A value from 0 to 100 that indicates the degree of

variation in ore particle sizes and components.

Other terms are the same as those in GB 2007.1~GB 2007.4.

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4 General provisions

4.1

This test method involves taking a series of paired samples from the same delivery batch and comparing the results obtained by the verified method (Method B) with the results of the reference method (Method A) to verify whether there is a significant difference between Method B and Method A, in order to determine whether Method B is applicable to daily work. The reference method is a method that does not produce systematic errors from a technical and experiential perspective.

4.2

In terms of statistical significance, there is no significant difference between the results obtained by Method A and Method B, so Method B can be identified as the conventional method.

4.3

This standard uses a t-test (one-sided) at a 5% significance level to assess systematic error.

5.1 Selection of reference method

5.1.1

The generally accepted reference sampling method is the stopped-belt sampling method, which involves stopping the load on the conveyor belt, determining the sampling point, inserting the sampling frame to the bottom of the ore flow to contact the belt surface (the length between the two frame edges shall be more than 3 times the maximum particle size of the ore), and taking out all the ore (full width and full thickness) within the frame as a reference increment sample.

NOTE: Depending on the site conditions and the provisions of Clause 4.1, the relevant parties may also negotiate and designate a suitable method as the reference method.

5.1.2 When verifying the sample preparation method, the first method (riffle splitting

method) of GB 2007.2 shall be used as the reference method. When verifying the divider, all discarded samples shall be used as the reference samples.

5.2 Selection of test ore

To demonstrate that the verified method is applicable to all types of ore, tests shall be conducted on ores with significant quality fluctuations. If the type of ore quality fluctuation is unclear, evaluation can be performed according to GB 2007.3, or the particle size-component index (SEI) can be determined according to the simplified test method in Appendix A.

5.3 Determine the quality characteristics of the test

GB/T 2007.5-1987 (Renamed from GB 2007.5-87)

Generally, the main component of the ore is selected as the quality characteristic for testing. Particle size or other chemical and physical test items can also be used as quality characteristics.

5.4 Selection of method for comparing test samples

Comparative experiments between two methods can be conducted using individual increment sample comparisons, or using subsamples or bulk-sample comparisons.

If the sampling points of two methods are close to each other in time or space, an increment sample comparison can be used. Otherwise, a subsample or bulk sample comparison shall be used. Each pair of subsamples or bulk samples must be taken from the same delivery batch. When manual sampling methods are not suitable for the increment sample comparison method, the subsample or bulk sample comparison method can be used. To save manpower, resources, and time, the subsample comparison method is recommended. Each subsample consists of no more than 5 increment samples.

5.5 Determine the required number of test groups

The number of test groups for the preliminary test shall not be less than 20. The required number of test groups is determined based on the standard deviation of 20 test differences and the maximum permissible systematic error δ .

NOTE: The maximum permissible systematic error shall be determined by the parties concerned in consultation before the test, taking into account technical and economic points of view, as well as the sampling, sample preparation and measurement precision of the test method adopted. Unless otherwise agreed, $1/2$ of the total precision (βSDM) can generally be used as the maximum permissible systematic error.

6.1 Sampling

From a delivery batch, the increment samples taken according to Method A and Method B are combined respectively to form a pair of bulk samples A and B, a pair of subsamples A

and B, or a pair of increment samples A and B.

6.2 Sample preparation and determination

A pair of samples A and B is prepared according to the same sample preparation method specified in the relevant standards, and measured according to the same method specified, to obtain a pair of measured values X_{Ai} and X_{Bi} .

6.3 Obtain 20 pairs of measurement values by following the steps above.

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