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GB

NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

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Replacing GB 482-1995

Sampling of coal seams

煤层煤样采取方法

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Table of Contents

Foreword 3

1 Scope 4

2 Normative references 4

3 Terms and definitions..... 4

4 General..... 5

5 Sampling apparatus 6

6 Sampling procedure 7

7 Sample preparation and check of workable seam-sample..... 8

8 Test of coal seam-sample..... 10

9 Result report..... 10

Appendix A (Informative) Calculation examples 12

Appendix B (Informative) Coal seam-sample report form 14

Appendix C (Normative) Columnar legend..... 16

Sampling of coal seams

1 Scope

This Standard specifies the sampling of coal seams.

This Standard applies to the sampling of lignite, bituminous, and anthracite coal seams.

2 Normative references

The following documents contain provisions which, through reference in this Standard, constitute provisions of this Standard. For the dated references, their subsequent amendments (excluding corrections) or revisions do not apply to this Standard. However, the parties who enter into agreement based on this Standard are encouraged to investigate whether the latest editions of these documents are applicable. For undated reference documents, the latest editions apply to this Standard.

GB/T 212 Proximate analysis of coal (GB/T 212-2008, ISO 11722:1999, ISO 1171:1997, ISO 562:1998, NEQ)

GB/T 217 Determination of true relative density of coal

GB 474 Preparation of coal sample (GB 474-1996, eqv ISO 1988:1975)

"Coal Mine Safety Regulations", 2006 edition, National Coal Mine Safety Administration

3 Terms and definitions

The following terms and definitions apply to this Standard.

3.1 Coal seam-sample

The coal sample taken from a coal seam in a mining face, exploration roadway or tunnel according to regulations.

3.2 Stratified seam-sample

The coal sample taken separately from each natural stratification of coal and stone band according to regulations.

separately. If it cannot be mined separately during production, workable seam-samples may be taken according to actual conditions; but shall be clearly stated in the report.

4.3.3 For open-pit mines, coal seams with a working bench height below 3.00 m are carried out in accordance with this Standard. When the height of working bench exceeds 3.00 m and it is really difficult to use the method specified in this Standard, the coal core can be taken out with a rotary drilling rig as a workable seam-sample.

4.4 Sampling requirements

4.4.1 Coal seam-samples shall be taken in the mine excavation roadway and the stope face.

4.4.2 Coal seam-samples shall be taken at the place where the geological structure is normal. However, if the geological structure damages the coal seam extensively but shall be sampled, sampling shall also be performed.

4.4.3 Stratified seam-samples and workable seam-samples shall be taken at the same time.

4.4.4 Before sampling, it shall peel off the surface oxide layer of coal seam.

4.4.5 Coal seam-samples are taken by the coal quality management department. The specific sampling location must be in accordance with this Standard. In special circumstances, it can be determined jointly with the geological department.

4.4.6 Sampling shall strictly follow "Coal Mine Safety Regulations" to ensure personal safety.

4.5 Sampling spacing

For the excavation working face of the main roadway, at least one coal seam-sample is taken for each advance (100~500)m. For the stope face, coal seam-samples are taken at least once a quarter. The number of samples is determined according to the length of the stope face: one for less than 100 m; two for (100~200)m; three for more than 200 m. If the coal seam structure is complex and the coal quality changes significantly, the coal seam-samples shall be appropriately added.

5 Sampling apparatus

5.1 Pick with flat head and tip or suitable sampling machine.

6.2 Sampling of stratified seam-sample

MARK each natural stratification of coal and stone between the first and second lines; MEASURE the thickness and total thickness of each natural stratification and verify. RECORD the lithology, thickness, and other matters related to coal seams of each natural stratification in detail.

PUT a piece of spreading cloth on the bottom plate of sampling point so that the coal samples collected can fall on the cloth and be taken separately according to the natural stratification. Each time a natural stratification is taken, it is all filled into a coal sample bag and the bag mouth is tightly tied. After the cloth is cleaned, another natural stratification is taken until sampling is finished. A stone band with a thickness of no more than 0.03 m shall be taken into the adjacent coal stratification for sampling. When sampling, coal or stone in the stratification inside the line must be taken. Coal or stone outside the line must not be taken.

Each coal sample bag must be accompanied by a properly filled label.

Number of stratified seam-sample: X-stratified-X.

Example: 2-stratified-4 indicates the fourth stratified seam-sample of the second coal seam.

6.3 Sampling of workable seam-sample

PUT a piece of spreading cloth on the bottom plate of sampling point so that the coal samples collected can fall on the cloth. The coal stratification and stone band to be mined during mining shall be taken together. All the coal samples collected shall be packed into coal sample bags. Each coal sample bag must be attached with a label filled in accordance with regulations. When sampling, coal and stone to be mined inside the line must be taken. Coal or stone outside the line must not be taken.

Number of workable seam-sample: X-workable-1,2,3, ...

Example: 2-workable-1,2,3, ... indicates the workable seam-sample of the second coal seam, including 1,2,3, ...stratifications.

7 Sample preparation and check of workable seam-sample

7.1 Sample preparation

After the coal seam-sample is collected, it shall be sent to the sample

$\bar{A}_{d,all}$ - Dry base weighted average ash mass fraction of workable part of all stratified seam-sample, %;

$A_{d,workable}$ - Dry base ash mass fraction of workable seam-sample, %.

Appendix A gives examples of calculations.

8 Test of coal seam-sample

8.1 The stratified seam-samples shall be tested for moisture, ash, and true relative density.

8.2 After the representativeness of workable seam-sample is checked qualified, it shall perform proximate analysis and the determination of items such as total moisture, total sulfur, calorific value, and true relative density.

8.3 At least two representative coal seam-samples are selected from each coal seam each year. MAKE raw coal and float coal samples according to GB 474 as required and do relevant item analysis.

Note: Float coal samples are samples after coal sample ash reduction according to GB 474.

8.4 The results of thickness measurement, ash content, and true relative density are reported in two decimal places.

9 Result report

The coal seam-sample report form is prepared with reference to Appendix B and shall include the following:

- a) Report number;
- b) Sampling date, filling date;
- c) Sampler, preparer, reviewer, approver;
- d) Coal seam information;
- e) Sampling location;
- f) Working face situations;
- g) All stratified seam-thickness and dry base ash, workable part of all stratified seam-thickness and dry base ash, and coal part of all stratified seam-thickness and dry base ash;

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