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

GB/T 5450-2014

Audibert-Arnu dilatometer test of bituminous coal

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(English Translation)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 5450-1997 "Audibert-Arnu dilatometer test of bituminous coal". Compared with GB/T 5450-1997, the main technical changes are as follows.

- DELETE the description of the number of turns of the electric furnace wire in the original standard (see 4.1.2 of the 1997 edition);
- MODIFY the contraction of adjustment lever to the tilt contraction (see Chapter 9.1; Chapter 7 of the 1997 edition);
- It is stipulated that if the initial dilatation temperature is greater than 500 °C during tilt contraction, the initial dilatation temperature shall be reported as

500 °C (see 8.1).

This standard uses the redrafting method to modify and adopt ISO 349.1975 "Hard coal - Audibert-Arnu dilatometer test".

Compared with ISO349.1975, this standard has been structurally adjusted.

Appendix A lists the comparison of clause number between this standard and ISO 349.1975.

There are technical differences between this standard and ISO 349.1975. The terms involved in these differences have been marked by vertical single lines (|) on the outer margins of the corresponding page. Appendix B gives a list of corresponding technical differences and their causes.

This standard was proposed by China Coal Industry Association.

This standard shall be under the jurisdiction of the National Coal Standardization Technical Committee (SAC/TC 42).

Drafting organization of this standard. Testing Research Branch of the Coal Science Research Institute.

1 Scope

This standard specifies the terms and definitions, method summary, reagents and materials, instruments and equipment, specimens, test procedures, expression of results, method precision of Audibert-Arnu dilatometer test of bituminous coal.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this standard.

3 Terms and definitions

The following terms and definitions apply to this document.

The temperature at which the dilatation rod stops moving.

The percentage of maximum distance that the dilatation rod rises to the length of the coal pencil.

4 Method summary

The test coal sample is made into a coal pencil of a certain specification according to the prescribed method, placed in a standard caliber tube (dilatation tube), on which a steel rod (dilatation rod) that can slide freely in the tube is placed.

5 Instruments

The electric furnace is composed of a shell with a base and a top cover as well as a metal furnace core. The furnace core is made of aluminum bronze metal block which can resist oxidation.

6 Specimen preparation and storage

The prepared coal samples for general analysis and testing shall be packed in glass bottles with ground stoppers and placed in a cool place. The test shall be completed within 3 days after preparation.

7 Instrument calibration and inspection

The gauge can be used to check the wear of the forming mold used in the test. Meanwhile it can also be used to check the new forming mold. If it inserts the gauge from the large-diameter end of the forming mold being inspected, it can observe.

8 Test procedure

Remove the wire plug at the bottom of the dilatation tube. Use a metal rod with an axe-shaped head to remove the semi-coke in the tube. Then use a copper wire brush to clean the remaining semi-coke powder in the tube.

9 Expression of results

Figures 10 ~ 13 respectively show four types of recording curves for positive dilatation, negative dilatation, contraction only, tilt contraction in the bituminous coal dilatometer test.

10 Method precision

The repeatability limit and reproducibility critical difference of Audibert-Arnu dilatometer test of bituminous coal are as specified in Table 3.

11 Test report

The test result report shall include at least the following information.

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