

ICS 73.04
CCS D20



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

GB/T 5751-2009

Chinese coal classification

中国煤炭分类

Issued on: June 1, 2009

Implemented on: January 1, 2010

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

1	Scope
2	Normative References
3	Terms and Definitions
4	General Principles for Classification
4.2	Requirements of Coal Samples for Coal Classification
4.2.3	Sampling for coal classification
4.2.5	Ash content of coal samples for coal classification
4.2.5.1	Dry-basis ash content productivity rate of coal samples for coal classification
4.3	Classification Parameters
5	Classification
5.3	Chinese Coals Classification System Table
5.4	Figure 1 demonstrates Chinese classification for coals. Note

Foreword

This Standard replaces GB 5751-1986 "Classification of Chinese Coals". Compared with GB 5751-1986, this Standard has the following changes. - The property of the standard was changed from recommendatory to mandatory; - The compiling format and writing form of symbol and reference were modified in accordance with the requirements of GB/T

1.1 and GB/T 3715; - Chapters and sections of this Standard are rearranged; sorting parameter AND its expression and determination method were put into one chapter (namely, 4.3.1); - Description of the term "coal" and its definition were added (Chapter 3); -

4.1 was added to demonstrate nature and purpose of this classification system; - 4.2 "Requirements of Coal Samples for Coal Classification" was added. This Standard was proposed by the China National Coal Association. This Standard shall be under the jurisdiction of National Technical Committee on Coal Chemical Industry of Standardization Administration of China. Drafting organizations of this Standard. Beijing Research Institute of Coal Chemistry, CCRI, Sinosteel Anshan Research Institute of Thermo-Energy Co., Ltd. AND Xi'an Research Institute, CCRI. Chief drafting staffs of this Standard. Luo Yunfei, Jiang Ying, Chen Yafei, Bai Xiangfei, Meng Qingbo, Zhang Qun, Yang Jinhe, Chen Peng, Chen Wenmin, Feng Anzu, Zhang Xiuyi, Hao Qi and Zhu Chunsheng. The previous edition replaced by this Standard is. - GB 5751-1986. Classification of Chinese Coals

1 Scope

China's national coal classification. China mines and burns more coal than the rest of the world combined, and this is the document that says what any given coal is. The classification is by application rather than by geology, which is the distinction that matters commercially: what a buyer needs to know is whether a coal will coke, whether it will burn in a pulverised fuel boiler, whether it can be gasified, and what it is worth. Those properties follow from rank - how far the coal has matured from peat towards anthracite - and from caking behaviour, and the system is built on measurable proxies for both: volatile matter on a dry ash-free basis for rank, and a caking index for the plastic behaviour that decides whether a coal can make metallurgical coke. Getting that classification right is what determines whether a shipment goes to a coke oven or a power station. The standard specifies the classification system for Chinese coals by application, and applies to coals explored, produced, processed, used and sold within China.

This Standard specifies classification system of Chinese coals based on application. This Standard is applicable to the coals explored, produced, processed, utilized and sold within the territory of the People's Republic of China.

2 Normative References

The following referenced documents are indispensable for the application of this Standard. For the dated references, the subsequent amendments (excluding corrigendum) or revisions of these publications do not apply. However, all parties who enter into an agreement according to this Standard are encouraged to study whether the latest edition of these documents applies. For the dated normative references, the latest edition of the document referred to apply.

GB/T 212 Proximate Analysis of Coal (GB/T 212-2008,

ISO 11722.1999, Solid mineral fuels-Hard coal - Determination of moisture in the general analysis test sample by drying in nitrogen,

ISO 1171.1997, Solid mineral fuels - Determination of ash,

ISO 562.1998, Hard coal and coke - Determination of volatile matter, NEQ)

GB/T 213 Determination of Calorific Value of Coal (GB/T 213-2008,

ISO 1928.1995, Solid mineral fuels - Determination of gross calorific value by the bomb calorimetric method and calculation of net calorific value, MOD)

GB 474 Method for Preparation of Coal Sample (GB 474-2008,

ISO 18283.2006, Hard coal and coke - Manual sampling, MOD)

3 Terms and Definitions

The following terms and definitions are applicable to this Standard. Coal It refers to the combustible solid organic sedimentary rock that is transformed from plant remains through coalification and is rich in carbon, which contains a certain amount of mineral substance; its corresponding ash content is less than or equal to 50% (dry mass fraction).

4 General Principles for Classification

4.1 The Chinese classification system of coals specified in this Standard is a kind of application-oriented technical classification system, which can be used for.

4.2 Requirements of Coal Samples for Coal Classification

4.2.1 Single coal (from single coal seam or constituted of coal of same coalification degree) is required to be adopted as sample in coal classification; blending coal

4.2.2 The coal sample for coal classification can also be exploration coal sample, coal seam sample, production coal sample or commercial coal sample.

4.2.3 Sampling for coal classification

4.2.3.1 Sampling for exploration coal shall be in accordance with the requirements of "Regulation on Coal sampling for Coal Resources Exploration".

4.2.4 Preparation for coal sample used for coal classification Preparation for coal sample used for coal classification shall be in accordance with the requirements of GB 474 and GB/T 19494.2.

4.3 Classification Parameters

4.3.1 There are two types of classification parameters - that is, the parameters used to represent coalification degree AND the parameters used to represent coal processing property.

4.3.2 Coal is divided into anthracite, bituminous coal and lignite according to coalification degree parameters (mainly of volatiles of dry ash-free basis).

4.3.3 The division of anthracite's subclasses takes volatiles of dry ash-free basis and hydrogen content of dry ash-free basis as indicators. However, if the results of the two indicators are in conflict, hydrogen content of dry ash-free basis shall be taken as the indicator.

4.3.4 Classification of bituminous coal shall take coalification degree and processing property (mainly of cohesiveness) of bituminous coal into consideration at the same time. Bituminous coal's parameters of coalification degree take volatiles of dry ash-free basis as

indicator;

4.3.5 Classification of lignite's subclasses takes light transmittance as indicator.

5 Classification

5.1 Coal Classification and Code In this classification system, at first, coal is divided into anthracite, bituminous coal and lignite according to indicators like volatiles of dry ash-free basis; then, bituminous coal is divided into meagre coal, meagre lean coal, lean coal, coke, fat coal, 1/3 coke, gas-fat coal, gas coal, 1/2 medium caking coal, weakly caking coal, non-caking coal and long flame coal according to indicators such as volatiles of dry ash-free basis and caking index. Various coal names can be code-designated as the following Chinese phonetic letters.

5.2 Coding Various coals are expressed by Arabian numerals. Tens-digit is divided in accordance with the coal's volatiles, anthracite is 0 ($V_{daf} \leq 10.0\%$), bituminous coal is 1~4 (namely, $V_{daf} > 10.0\% \sim 20.0\%$, $> 20.0\% \sim 28.0\%$, $> 28.0\% \sim 37.0\%$ and $> 37.0\%$), lignite is 5 ($V_{daf} > 37.0\%$). For single-digit, anthracite is 1~3, representing degree of coalification; bituminous coal is 1~6, representing cohesiveness; lignite is 1~2, representing degree of coalification.

5.3 Chinese Coals Classification System Table

5.3.2 Classification of anthracite's subclasses is detailed in Table 2.

5.3.3 Classification of bituminous coal is detailed in Table 3.