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Comparative Analysis of Coal Products Extracted From Central Asian Coal Deposits

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Abstract:

In this article, samples of different types of coal mined in Central Asian coal mines were taken and experiments were conducted on different quality indicators. The results were analyzed.

Keywords: coal, fuel, quality, moisture, ash content, low combustion temperature, standard requirements.

Nowadays, when people in developed countries think of fuel, they think of electricity and gas, not coal. And we have a natural supply of coal. Unfortunately, in rural areas, coal is still used to heat homes. This does not mean that developed countries have stopped using coal. Coal is used to generate electricity in thermal power plants. As a result, demand for coal remains high. Examples include:

The main coal consuming countries are China, the United States, India, Russia and Japan. Today, the ten countries that consume coal account for 87 percent of total consumption. In general, countries rich in coal reserves use coal mainly to generate electricity. However, there are exceptions. For example, Russia is one of the countries with the largest coal reserves in the world. It is the fourth largest country in the world. Nevertheless, Russia produces almost half of its electricity from natural gas. Because Russia has rich natural gas resources. Brazil has 1.5 billion tons of solid coal reserves, but on the other hand it has very rich hydraulic resources. It therefore supplies most of its electricity generation from hydraulic sources.

In 2009, Uzbekistan became the world's fourth largest producer of lignite. However, only 30% of electricity generation in the country is provided by coal resources. The rest is covered by natural gas. However, Uzbekistan does not have such a high level of natural gas resources. That's why it has to import natural gas. This is not an economically viable option.

Along with coal mining, quality control is also important. Because the heat it emits when it burns depends on the quality of the coal. The most important thing for us is the high heat of coal burning.

Humidity, ash content and combustion temperature are the most important indicators of coal quality. We classify it by these indicators. To do this, we conducted experiments in a special laboratory. As an example, we took BK, DSh, BOMSh, BOMSh-2B coal mined in Central Asian coal basins.

The moisture content of the samples was determined in accordance with GOST 27314-91. We needed an analytical balance, a drying cabinet, and a desiccator. Moisture content of working coal samples Moisture content of BK coal sample is 11.5%, Moisture content of DSSh coal sample is

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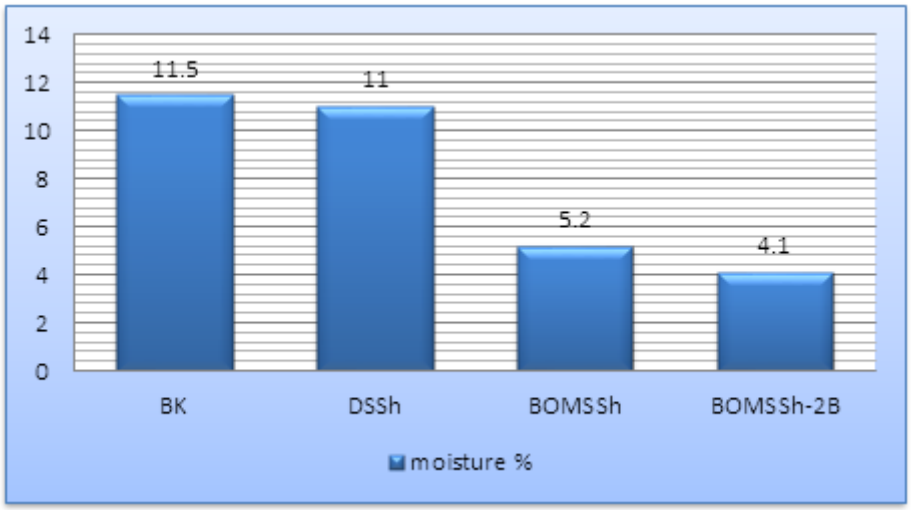
11%, Moisture content of BOMSH coal sample is 5.2%, and BOMSH-2B grade the moisture content of the mir sample was 4.1%.

Compliance with the test results

Sample brand	Standard Permissible Limit (maximum ;%)	Test results (%)	Compatibility of indicators
BK	28,0	11.5	Suitable
DSSh	28,0	11	Suitable
BOMSSh	40,0	5.2	Suitable
BOMSSh-2B	40,0	4.1	Suitable



Histogram of differences in moisture content of the samples

The ash content of the samples was determined in accordance with GOST ISO 1171-2012. We needed an oven, an analytical balance, and a desiccator. The ash content of the samples after combustion is 12.6% in the sample of BK coal, 12.5% in the sample of DSSh coal, 38.7% in the sample of BOMSH coal, and 38.7% in the sample of BOMSH-2B coal. was found in experiments to be 35.5%.

Compliance with the test results

Sample brand	Standard Permissible Limit (maximum; Q^{r}_{j}:kcal/kg)	The result obtained during the testing process (%)	Compatibility of indicators
BK	16,0	12,6	Suitable
DSSh	33,0	12,5	Suitable
BOMSSh	25,0	38,7	Not suitable
BOMSSh-2B	25,0	35,5	Not suitable

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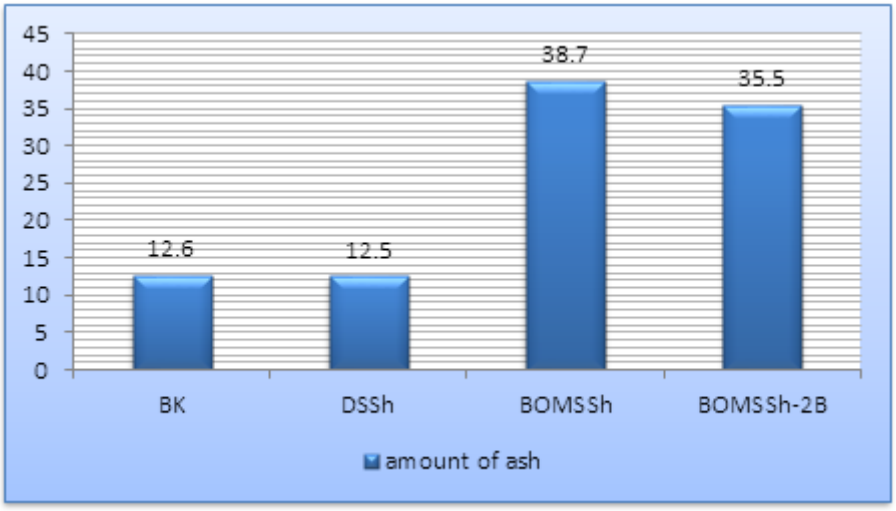
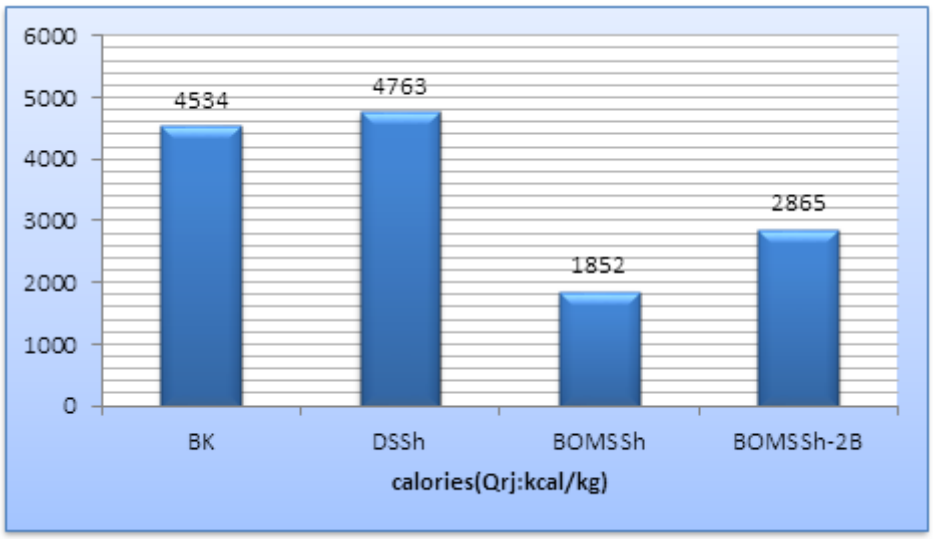


Histogram of the samples by the amount of ash left after combustion.

Determination of gross heat value and calculation of net heat value was performed in accordance with GOST 147-2013. We needed a calorimeter and an analytical balance. The amount of heat released during the combustion of the samples in the sample of BK coal 4534 Qrj: kcal / kg, in the sample of DSSh coal, 4763 Qrj: kcal / kg, in the sample of BOMSH coal 1852 Qrj: kcal / kg, 2865 Qrj: kcal / kg in BOMSh-2B coal sample.

Sample brand	Standard Permissible Limit (maximum; Q^r_j:kcal/kg)	The result obtained during the testing process(Q^r_j:kcal/kg)	Compatibility of indicators
BK	3900	4534	well-proportioned
DSSh	4700	4763	Mos keladi
BOMSSh	2800	1852	Mos kelmaydi
BOMSSh-2B	4700	2865	Mos kelmaydi



Histogram of the samples for the amount of heat released during combustion.

The results showed that the moisture content of the samples is normal, ie moisture does not interfere with complete combustion. Complete combustion determines ash content. The high ash

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content of coal during combustion indicates that the ash content of the coal is high. High ash content is considered a negative result. There are two main reasons for the high ash content. The first is whether the coal is ripe or not, and the second is the composition of the coal.

When we say that coal is ripe, it means that it will take many years for the product to ripen. However, early mining has a negative impact on its quality. In addition, the presence of soil or other non-combustible minerals in coal can increase the amount of ash. Experiments show that the ash content of samples from BK and DSSh coal meets the standard requirements. The ash content of the samples from BOMSh and BOMSh-2B coals did not meet the requirements of the standard.

Now, if we analyze the results of the experiment, the lower combustion temperature of BOMSh and BOMSh-2B coal samples with high ash content did not meet the standard requirements. Low combustion temperatures of BK and DSSh coal samples with low ash content were found to meet the standard requirements.

In conclusion, it should be noted that coal mining is well developed. Otherwise, hard-mined coal may be used for nothing but to increase the volume of scrap metal. The quality of mining, that is, clean mining, is also important.

References:

1. Bakhodir, E., & Mastona, N. (2022). Product Quality of Regulatory Documents Place for Improvement. *Journal of Ethics and Diversity in International Communication*, *2*(3), 71-74.
2. Эргашов Баходир Абдумухтор ўғли, Хашимжонова Ирода Насимжон қизи. Стандарт ва техник регламентларнинг маҳсулот ишлаб чиқариш ҳамда сифат кўрсаткичларини яхшилашдаги ўрни. Материалы международной научно-практической онлайн – конференции приуроченной к 15-летию филиала и в честь академика В.Б. Кудрявцева «Интеллектуальные технологии в образовании»
3. Bakhodir, E. (2021). Effects of Change on Cotton Harvesting Physical and Mechanical Performance. *International Journal of Innovative Analyses and Emerging Technology*, *1*(7), 9-13.
4. Mirkhojaev, M. M., & Ergashov, B. A. O. (2020). Analysis of determination of cotton field quality as a result of changes in technological processes. *SAARJ Journal on Banking & Insurance Research*, *9*(6), 38-44.

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