

Anna Shcherbakova
I.I. Kurmelyov, research supervisor
V.V. Tykhonenko, language adviser
SHEI «National Mining University», Dnipropetrovsk

Qualitative Characteristics of Seam h_{11} of Mine №81 “Kievskaya”

Coal seam h_{11} has complex mostly two-cluster structure and characterized by relatively stable thickness from 0.60 to 1.78 m (with the prevailing one of 0.75-0.85). Rock benches in amounts of 1-2 are represented by clay and sandy shales with the thickness of 0.02-0.50 m. Coal belongs to anthracites (average index of vitrinite reflection is more than 2.40%, emission of volatile substances is less than 9%).

As for average index of vitrinite reflection, volume emission of volatile substances to dry ashless state and as for anisotropism of vitrinite reflection, anthracite belongs to 3A, vitrinite one.

Table 1. Average Values of indices Charactering Degree of Coal Metamorphism

Emission of Volatile Substances, $V^{daf}, \%$	Volume Emission of Volatile Substances, $V_{06}^{daf}, \text{cm}^3/\text{g}$	Logarithm of Specific Electric Resistance $\lg\rho$	Density of Organic Mass, $d_a, \text{g}/\text{cm}^3$	Reflection Index, $R_0, \%$	Anisotropism of Vitrinite Reflection, $A_k, \%$	Total of Surrounding Components $\Sigma OK, \%$
0.97-5.16	47-96	0.770-1.706	1.54-1.76	4.41-5.15	61-60	3-7

As for the appearance the coal of assessed seams is black, banded due to the alternation of lustrous and dead layers, strong, divided with cleavage fissures, with shell-like break. As for microscopic structure coal of the studied seams is ultraglace, in some points it is glance with fusainized components. Mineral spots are represented by clay, pyrite, carbonates, and quartz.

Ash content of coal seam within mine field varies from 16.1 to 25,9%. The following oxides are prevailing in ash composition: SiO_2 – from 23.22% to 78.81%, Fe_2O_3 – from 6.42% to 63.35%, Al_2O_3 - from 2.20% to 23.69%.

Average temperature of the beginning of liquid smelting state varies from 1178°C to 1245°C, i.e., ashes of the assessed seams are medium-melting.

As for sulfur content anthracite of the seam h_{11} belongs to medium-grained. Mass fraction of general moisture varies from 4.96 to 5.33%.