

Artem Artemiev
V.V. Ishkov, research supervisor
L.O. Tokar, language adviser
SHEI «National Mining University», Dnipropetrovsk

Laws of Endogenous Fissures Development within Donbass Aleurolite Coal-bearing Strata

Aleurolites of Donbass coal-bearing strata form thin interbeds and seams. Coalescing, they shape not inconsiderable embedded bodies. Besides, thin interbeds and aleurolites lenses having no independent value are frequent in sandstones and argillites. Intermediate position of aleurolites among terrigenous rocks, determines their textural and structural features.

Distances between endogenous fissures of clayey aleurolites and limey ones are statistically significant.

Maximum distances between endogenous fissures are within limey aleurolites forming both roof and sill of T grade (average distance between fissures is 83 cm), and minimum are in clayey aleurolites superposing layers of Д grade (average distance between fissures is 12 cm).

Under otherwise equal conditions, clayey aleurolites are more fissured to compare with limey ones; alluvial aleurolites are more fissured than coastal-maritime ones; those having stratified structure are more fissured than aggregated ones; component lenses and seams in argillites are more fissured than those interlaid with sandstones and chalkstones; poorly sorted are more fissured than equigranular ones.

Increase in katagenesis degree diversely effects fissility of clayey and limey aleurolites; the fact shows availability of two different fissility history of the rocks in the process of katagenesis. Distance between fissures in clayey aleurolites increases upon katagenesis degree matching changes in metamorphism of Д grade to Ж grade coals (average distance between fissures is 16 cm). The law depends on katagenesis reconstitutions of clay matter and structural and mineralogical characteristic of the aleurolite type.

Distance between endogenous fissures in limey aleurolites increase monotonically depending upon katagenesis degree of a stage matching Д grade coal (average distance between fissures is 31 cm) to T grade coal (average distance between fissures is 83 cm). Analogy in changes of fissility of limey aleurolites, coastal-maritime sandstones, and chalkstones in the process katagenesis is connected with analogy of authigenous mineral formation and structural changes in the process of reconstitution of basic substance of the rocks.