

## Pengaruh Pemakaian Tanah Liat / Clay Pada Karakteristik Briket Batubara

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### Abstrak

Penelitian pengaruh tanah liat atau clay pada pembuatan briket batubara tanpa karbonisasi dengan komposisi tanah liat sebagai variabel yakni 0%, 5%, 10% dan 15%, telah dilakukan di Laboratorium UPT - LSDE, BPPT.

Hasil pengamatan diperoleh uji kuat tekan terhadap briket dengan tanah liat 0% = 5,5 kg/cm<sup>2</sup> ; 5% = 9,25 kg/cm<sup>2</sup> ; 10% = 12,95 kg/cm<sup>2</sup> ; 15% = 16,65 kg/cm<sup>2</sup>. Dari segi ketahanan dan lama pembakaran menunjukkan briket dengan 0% tidak utuh, runtuh pada menit ke 90; briket dengan tanah liat 5% tidak utuh, runtuh pada menit ke 120; briket dengan tanah liat 10% utuh sampai ke menit 152; briket dengan tanah liat 15% utuh sampai ke menit 122. Analisa emisi gas pada pembakaran briket dengan tanah liat 0% menunjukkan CO rata-rata 434 ppm ; tanah liat 5% CO rata-rata 530 ppm ; tanah liat 10% dengan CO rata-rata 394 ppm dan tanah liat 15% CO rata-rata 386 ppm.

Dua variabel atau komposisi tanah liat pertama tidak utuh dan dalam pembakaran tidak bertahan lama serta emisi gas CO lebih tinggi. Sedangkan pada dua variabel terakhir dapat disimpulkan bahwa tanah liat dengan komposisi tanah liat 10% lebih baik.

*Research on clay as raw material in producing coal briquette without carbonization has been conducted in laboratory of UPT-LSDE, BPPT. Clay to coal composition that was used as variable was 0%, 5%, 10% and 15%.*

*Result of pressure test of the mixture are as follow: for clay to coal 0% the strength is 5.5 kg/cm<sup>2</sup>; for clay to coal 5% the strength is 9.25 kg/cm<sup>2</sup>; for clay to coal 10%, the strength is 12.95 kg/cm<sup>2</sup>; for clay to coal 15%, the strength is 16.65 kg/cm<sup>2</sup>. From the view of lifetime and combustion time it was showed that briquette for clay to coal to coal 0% will be broken into pieces in 90 minutes, for clay to coal 5% will be broken into pieces in 120 minutes, or clay to coal 10% will be ruined into pieces in 152 minutes, for clay to coal 15% will be ruined into pieces in 122 minutes. The gas analysis showed that CO gas emission of the briquettes for the five are as follows: 0% of clay was 434 ppm, 5% of clay was 530 ppm, 10% of clay was 394 ppm, and 15% of clay was 386 ppm.*

*The first two compositions is considered as weak, shorter durability and emitted more CO gas emission. Finally, between the last two compositions can be concluded that, that one with 10% of clay is the best.*