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## Control of Low Bulk Density Region around Briquette in Briquette Blending Carbonization Process

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One of the coal pre-treatment process used to produce high-strength coke while incorporating a large amount of low-quality coal is the briquette blending carbonization process. Briquette blending carbonization process improves coke strength by mixing high-density briquette with powder coal. On the other hand, it is known that blending briquettes with powder coal forms low bulk density regions around the briquettes, raising concerns about the potential decrease in coke strength. To reveal the factors that form low bulk density region around briquette, we quantitatively evaluated the low bulk density regions when briquette was blended with several powder coals. This evaluation was based on the product of the density difference from the powder coal portion and the volume. As a result, it was confirmed that the formation of the low bulk density region around briquette was affected by the distribution and moisture of powder coal portion. We then evaluated the coke strength by varying the dilatibility of the briquette blended into powder coal with different quantitative values of low bulk density regions around briquette. As a result, it was confirmed that the coke strength decreased when the dilatibility of the briquette was low, and a certain level of dilatibility of the briquette was necessary to maintain coke strength. Additionally, it was found that smaller quantitative value of the low bulk density regions, lower the dilatibility of the briquette required to maintain the coke strength. This study demonstrated that it is possible to produce high-strength coke even while lowering the dilatibility of briquette by controlling and reducing the low bulk density regions around briquette.

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