
IMPLEMENTATION OF TAMPING TECHNOLOGY AT OPERATING COKE OVEN BATTERIES

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The article is devoted to verification of ensuring the appropriate economy and efficiency of coke production while reducing the level of consumption of scarce raw materials in order to optimise production in the current conditions of a coke-chemical enterprise. It is shown that the production of blast furnace coke using the technology of tamping the coal charge allows the use of a large amount of cheap gas coal without reducing the quality of the resulting blast furnace coke. However, despite the fact that this coking technology has been in use for a long time, the literature data on the impact of increasing the loading density on coke quality parameters is insufficient, contradictory and outdated.

This article describes the main technical solutions for the conversion of an existing coke oven battery from the bulk coking chamber loading technology to the tamped coal cake loading technology and presents the results for the reconstructed coke oven battery. This project was developed and implemented by SE "GIPROKOKS" and HuDe. The economic and technological indicators of coke quality as a result of the conversion of the existing coke oven battery to the technology of loading a tamped coal cake were considered and compared with the parameters of its operation using the technology of bulk loading of coking chambers. It is shown that during the control period of observations (19 months) of the enterprise's operation, the mechanical strength of M25 coke increased on average from 85.2 to 87.4 %; post-reaction strength CSR – from 48.9 to 53.9 %; at the same time, the abrasion index M10 decreased from 8.0 to 5.9 %, and the reactivity CRI – from 38.0 to 37.2 %, respectively, when working using the tamping technology compared to the bulk method. In addition, the coke obtained by using the charge tamping method is characterised by lower values of ash and total sulphur content.

Keywords: coke oven battery, charging, bulk (gravity) method, tamping technology, coal cake, coke properties.

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