DOI: 10.31081/1681-309X-2021-0-4-9-15 Specialty 161. U.D.C. 662.749.2

ESTIMATION OF THE SUITABILITY OF THE COAL CHARGE FOR PRODUCING BLAST-FURNACE COKE OF THE GIVEN QUALITY USING THE TAMPING TECHNOLOGY

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The article shows the relevance of technologies that implement the possibility of expanding the raw material base of coking with the help of special methods for preparing the charge, among which tamping is currently taking the leading place in the world and in Ukraine. It is shown that when considering the issue of introducing the technology of coking the tamped charge, a previous link of the available raw material base with the planning of the main structural parameters of the coke oven is necessary. It will provide on the basis of global low-caking coals the production of coal coke with characteristics that are as close as possible to the requirements of the world's leading iron producers.

On a general example, the developed complex and the procedure for performing the corresponding assessment are presented, the following includes:

– a comprehensive analysis of the properties of bituminous coals intended to be used as components of the raw material base (technical, petrographic and other analysis);

– drawing up on their basis model charges, taking into account the restrictions on ash content (≤ 9-10 %), burst pressure (≤ 7 kPa), thickness of the plastic layer (≤ 15 mm.);

– laboratory determination of indicators of tamping capacity of model charges – density of rammed briquettes (γ, g/cm^3) and their shear strength (σ_{ss}, kPa);

– laboratory coking of tamped model mixtures with subsequent determination and comparison of the properties of the obtained cokes;

– based on the data on the tamping capacity of the model charges, which showed optimal results in terms of the formation of coke of the best quality and the parameters of the known (mastered) designs of furnaces and charge, the calculated determination of the value of the maximum height of the coking chamber for the studied composition and properties of the charge.

Keywords: coking, tamping of coal charge, preliminary assessment, analysis of coals, model charge, tamping indicators, coking, coke properties, coking chamber height.

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