

RAW MATERIAL BASE FOR COKING OF THE COKING PRODUCTION OF PJSC "ARCELORMITTAL KRYVYI RIH" IN THE PERIOD FROM 2017 TO 2021

© **N.V. Mukina** (Coke-chemical production of PJSC "ArcelorMittal Kryvyi Rih", 50095, Dnepropetrovsk region, Kryvyi Rih, Krivorozhstal st., 1, Ukraine), **D.V. Miroshnichenko**, Doctor of Technical Sciences (NTU "Kharkiv Polytechnic Institute", 61002, Kharkiv, st. Kirpicheva, 2, Ukraine)

The article presents the data on coal components that were used in the charge for coking coke oven batteries №№1-4 (bulk coal charge) and №№ 5, 6 (tamped coal charge) of the coke-chemical production of PJSC "ArcelorMittal Kryvyi Rih" in the period from 2017 to 2021, as well as averaged information on some quality indicators of the produced coke. In general, the coal raw material base of the enterprise for the last five years has been of a stable inter-basin nature with a predominance of coals from the USA, Kazakhstan, and the Russian Federation.

It is shown that, as the tamping technology suggests, moisture content, bulk density and content of classes less than 0.16 and less than 3.0 mm in coal charges supplied to the coal waste plant. №№ 5, 6 are significantly higher than the values of similar indicators of coal charges supplied to the numbers 1-4. Along with this, due to the use of coals of a certain quality, ash content, total sulfur content and the thickness of the plastic layer in coal charges supplied to the coal bunker №№ 1-4, is slightly higher than similar indicators of coal charges supplied to the boiler №№ 5, 6. In total, during 2017-2021, the composition and quality indicators of the coal charge for the production of coke at the boiler plant №№ 1-4 practically did not change, while in the coal charge for the production of coke on coke oven batteries №№ 5, 6 there is a decrease in the share of highly volatile coals with a simultaneous increase in the content of medium-volatile and low-volatile components.

The given values of the quality indicators of the obtained blast-furnace coke indicate that the use of tamping technology makes it possible to obtain blast-furnace coke of a higher quality than by using a traditional technology. In particular, the coke obtained at the oven batteries №№ 5, 6 are characterized by lower values of ash content, total sulfur content and abrasion (M_{10}) with higher values of mechanical strength in terms of M_{25} and post-reaction strength (CSR).

Keywords: coal, inter-basin raw material base, coking, charge tamping, coke quality.

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