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SCIENTIFIC BASES OF TECHNOLOGY OF MANUFACTURE OF HIGH-TEMPERATURE STABLE MAGNESIUM BRICKS USING LOCAL RAW MATERIALS OF TURKMENISTAN (DOLOMITE, BISCHOFITE)

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The fact that the country has huge reserves of various underground and surface resources leads to an increasing number of industries that find, develop and process raw materials. In particular, the number of modern enterprises in the oil and gas, chemical, energy, transport and communication, mining, construction, agricultural, textile and food industry sectors is increasing. Thus, the demand for important industrial products and resources is met at the expense of our own local resources and exported to the foreign market. The development of these industries, in turn, is directly related to the need for the purification and efficient use of water resources, including wastewater. This is especially important in our humid, hot and dry climate.

Currently, the production of various types of construction materials based on local raw materials and their export to the world is the main demand of the time. This scientific The research work consists of buying imported high temperature resistant magnesia bricks based on local raw materials available in Turkmenistan. These bricks are widely used in the Turkmendemirunumleri state enterprise belonging to the Ministry of Industry and Construction Production, as well as in the cement factory of the country. The main ingredient of magnesia bricks is magnesium oxide (MgO), which is mainly found in Turkmenistan in the form of dolomite ($MgCO_3 \cdot CaCO_3$) and bischofite mineral ($MgCl_2 \cdot 6H_2O$).

Several methods are known for obtaining high temperature stable magnesia bricks based on synthesized magnesium oxide. In this research work, pure magnesium oxide synthesized according to methods V and VI "A" was ground to 0.25 mm in a ZM 200 mill, a product of the German company RETSCH. It was then moistened to 5-6%. It was then molded into a cylindrical shape with a diameter of 60 mm and compressed at 150 bar. The obtained tablet was dried at a temperature of 100 oC for 4 hours and then stored at a temperature of 1700 oC for 3 hours in a P310 muffle furnace, a product of the German company Nabertherm. To adjust the temperature program of the muffle page, the magnesium oxide sample was monitored for mass loss at every 100 oC temperature up to 1000 oC on a DIL402 PC dilatometer, a product of Nietzsche, Germany, and the temperature program of the muffle page was adjusted accordingly.

The purpose of the work to study the possibilities of obtaining magnesium oxide on the basis of local raw materials of Turkmenistan (dolomite, bischofite). Analysis of the scientific basis of production of high-temperature-resistant magnesia bricks based on obtained magnesium oxide . Today, several methods of obtaining magnesium oxide used for construction purposes are known on earth. The strong magnesium-oxygen bond in the crystal pore of magnesium oxide (MgO) increases its high temperature stability. Therefore, the main feature of building materials made of magnesium oxide is its stability to high temperatures. This scientific research work, as it is known by its name, consists of buying imported high-temperature

resistant magnesia bricks for the “Türkmendemirönümleri” State Enterprise of the Ministry of Industry and Construction and for the Cement Factory of the country.

Novelty of the work. The efficient methods of thermal and chemical extraction of magnesium oxide from dolomite will be analyzed. A convenient method of obtaining magnesium oxide from bischofite will be studied. Based on the obtained magnesium oxide, the scientific basis of making magnesia bricks resistant to high temperature will be analyzed. A technological scheme for obtaining magnesium oxide from dolomite and bischofite and obtaining magnesia bricks stable at high temperatures will be developed.

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