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MINING WASTE: PROBLEMS AND WAYS OF SOLUTION

Today Ukraine is one of the largest manufacturers of facing stone in the world. The immense development of mineral resources of the country without implementation of low- and non-waste technologies is accompanied by the formation of a large amount of wastes at different stages of raw materials extraction and commodity production. In many cases the volume of waste exceeds the amount of the products.

Just 10–15 % of the total number of extracted natural materials is processed to the final product, and the rest is considered to be a waste product. According to the Ministry of Economy of Ukraine about 500 million tons of wastes from production and consumption produce annually, and only 10-15% of wastes are used as secondary material resources. The rest is accumulated in storages, sludge collectors, waste banks and dumps. Wastes occupy about 4 % of the territory of Ukraine; the total waste volume is about 30 billion tons. The cost for storage and disposal wastes accounts for about 20 % of product cost.

Thus, there is a need to develop and implement measures to optimize the use of waste after mining. The results of the research showed that minerals extraction and consumption is conducted irrationally. The use of obsolete methods of production has its negative effects. As the result, about 50 % of salts, 40 % of coal and 25 % of metal ores remain in the subsoil of the Earth. Only one third of received minerals is used directly to its purpose, and two-thirds accumulates in dumps and crash-rock pads.

Rich ores are always mined as a product of the primary use. Dumps at mining enterprises by their mineral content can even be richer compared to some natural deposits.

The developed technologies of complex use of raw materials and waste products have not been implemented yet due to the existing organization of production and, because of economic inexpediency. That's why, at present, the technological problem solving task is to find and develop new technological and technical methods that will improve the economic efficiency of waste utilization technologies.

Analyzing the existing problems, some measures to optimize post-mining lands and to use wastes after processing blocks as secondary raw materials can be worked out: selective extraction of the rocks from subsoil; their separate storage and further use; the use of solid industrial waste for the production of building materials (synthetic gravel and macadam and their further use as a filler for concrete mix; in building of paved roads; for the production of ceramic products, etc.); the use of excavated space of quarries for the industrial wastes disposal.

To implement mentioned above measures it is necessary to improve the state normative and legislative basis, as well as to understand the necessity of resource-saving technologies introduction.

Thus, separate storage of overburden rocks and wastes allow to ensure the beneficial use of subsoil and to reduce significantly the rate of the environment disturbance. Besides, it can also help to solve the problem of secondary use of non-standard materials of facing stone.