

## ANALYSIS OF THE CHOICE OF MINING EQUIPMENT UNDER CONDITIONS OF MEZHRYRICHAN DEPOSIT OF GRANITES

Mezhyrichan deposit of granites is located 0.8 km. to the East from the village of Mezhyrichka in Korosten district of Zhytomyr region. The average granite capacity ranges from 23.4 to 62.8 m. according to exploration wells. The main decorative properties of granite are a color, a texture, and polishing. Granites are easy to process, they are cut up without considerable pricked-out edges, and polished on advanced technologies. The rocks of the deposit meet the requirements of the NRB and are suitable for the production of building materials in all types of construction without restrictions. Granite is in high demand in the Ukrainian market. Therefore, at present, the issue of rational extraction is relevant. The mining technology involves the following principal operations:

- separation of a block (monolith) of granite from a massif;
- disassembly of the monolith on the marketable blocks of a smaller size and blanks; separation the parts (from the blocks) unsuitable for cutting (passivation);
- removal of waste from the quarry.

The DIAMOND WIRE MACHINE of "TSY 37 G" model with the main engine power of 55 kW is the cable machine used for separating the monolith from a massif together with the drilling-in-air method in this field. The rope machine has the ability to create separating cracks both in the vertical and horizontal plane. "TSY 37 G" is operated by a remote control located outside the dangerous zone, which has a radius of 10 m. The efficiency of this equipment cannot always ensure the stable operation of the enterprise. Therefore, it is necessary to examine other cable machines presented in the market of the block stone extraction equipment.

To conduct the comparison, we selected the cable machines of Huada brand of DWS-90AX-8P model, which have the optimal correlation of price and technological characteristics. They are developed with the touch screen for greater ease of use. This type of machine wins the above-mentioned one because of its main engine power. Due to the low percentage of failures, these machines allow you to control the tension force during the rope feed. When the rope saw functions in automatic mode, it continuously adjusts its speed according to the load on the place of the mine. Because of this, one can achieve stable and high labor efficiency. The safety features provide maximum protection in case of rope breakage, phase loss, and overload. The running gear operates at two speeds, providing a maximum speed of 3 m. per min.

The table presents the comparison of the technical characteristics of two cable machines, one of them is DIAMOND WIRE MACHINE of "TSY 37 G" model and the other one belongs to "Huada" brand with DWS-90AX-8P model.

Technical characteristics of the cable machines

Model	Main engine power	Cable saw length (m)	Linear speed (m / s)	Weight	Notes
DIAMOND WIRE MACHINE TSY 37 G	55 kW	30-145	0-40	2 t	Used to develop a mine
HUADA DWS-90AX-8P	90 kW	30-160	0-50	1.95 t	Used to develop a mine

So, studying the characteristics of the modern equipment and taking into account the basic parameters, we propose to use the cable machines of Huada brand of DWS-90AX-8P model for the conditions of Mezhyrichan granite deposit.