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STUDY OF THE MASSIF FRACTURING AT GOLOVINO LABTADORITE DEPOSIT

Mineral composition of labradorite, the basic systems of cracks, full specific fracturing, and the output of blocks from rock massat State Enterprise "Golovinsky quarry" are considered.

Introduction. Fracturing of rocks is one of the parameters that determine mineral resources and affect the operation of the field. Fracturing is one of the factors that determine the differences between the mechanical properties of rocks in a sample and in a massif.

The natural fracture of the rock during the exploitation of mineral deposits is supplemented by technogeneous fracturing, which, in turn, depends on the methods of driving the drilling and blasting. It occurs as a result of an explosion in massif. At the same time, with the increase of the magnitude and diameter of the charge, the fracture and the degree of fracture openings increase.

All types of fractures in one way or another affect the process and quality of drilling and blasting operations. This is primarily due to the fact that at the initial stage fractures divide the solidity of massif into separate parts. Fractures can contain water or debris of weathered rocks and affect the rate of propagation of shock waves during the explosion. Results of experiments show that the part of energy transferred by wave, when meeting fractures, is spent on the grinding of the material on its boundaries, and the second part of the energy goes in the direction of the free surface.

Materials. Labradorite, is a premium facing stone consisting of practically one plagioclase, a regular labrador. The structure of labradorite, as a rule, is morphicacinozious; the texture is trachydoid or massive; the color can have spectrum from white to black. Irisation of plagioclaseis often observed.

Golovyno field has deposits of dark gray to black labradorite. The mineralogical composition is represented by plagioclase (60-100%), pyroxene (up to 40%), olivine (up to 30%), potassium spar (up to 3%), and quartz (up to 7%).

Results. Golovyno deposit is characterized by significant fracturing. In the entire period of the deposit exploitation, rock fracturing was studied during all geological explorations.

The obtained data show that 3 basic systems of fractures can be distinguished within the field. The data are summarized in the table (1):

Basic systems of fractures in the quarry:

Table 1

№	System of fractures	Stretch azimuth°			Stretch angle°			The average distance between fractures
		from	to	shift	from	to	shift	
1	2	3	4	5	6	7	8	9
1.	Longitudinal (S)	275	315	305	70	90	85	2,5
2.	Transverse (Q)	7	57	30	75	90	85	2,0
3.	Plast (L)	-	-	-	-	-	10-30	1,7

According to the prospecting data, the total specific fracturing o f labradorites varies from 0.11 to 4.01 m / m2. The average fracturing for the deposit is 1.18 m / m^2. Labradorite of Golovino deposit is characterized by weak fracturing and large blockiness, and the maximum linear dimension of the block in the massif is 4.0 m; the average value is 1.8 m with fluctuations from 0.7 to 2.7 m.

According to the company data, the output of blocks for the last 5 years is 23.5%. Taking into account the entire complex of data on decorative properties of labradorites in Golovyno deposit, there can be distinguished following varieties: highly decorative, decorative and non-decorative.

Taking into account the properties of rock and the nature of its exploitation, as well as to increase service durability of products, Golovyno labradorite should be used for interior, floor and stairs lining.

Conclusions. Tectonics of the deposit is rather complicated. Comprehensive analysis of materials allowed to decipher the structure of the deposit and to allocate the following levels of primary and tectonic fracturing:

1) joints – primary fracturing, tectonic fractures;

2)narrow extended zones of high fracturing; tectonic seams of the northwest stretch with a slight displacement along their faulting zone;

3)wide linear zones of increased fracturing of the northeastern and northwest directions which control the position and orientation of th eareolas of hydrothermal-metasomatic changes of labradorites.

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