natural environments' state provision are defined by the mining technologies depending on the applied rock failure methods; compared to the natural environments' current state exponents the mining technology defining its best value is chosen.

While estimating the danger level of the mining practice influence on the labour conditions it is necessary to proceed from the premises that: the compared mining technologies affect differently on the industrial injury or occupational illness possibility; the labour conditions requirements are characterized by two state levels the required (high) and current (low) ones; the actions aimed to the required labour conditions' state provision are defined by the mining technologies and depend on the applied methods and means of their performance; at the heart of the labour conditions evaluation the mining technologies' possible versions comparison based on the minimum of negative effect on the human should lie.

The mining practice isn't referred to the number of productions characterized by the increased danger for the environment and labour conditions. The estimation of its level of effect on the environment and labour conditions should be carried out with due consideration of the constraints imposed on the mining manufacturing technologies.

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SUBSTANTIATION OF PARAMETERS OF TECHNOLOGIES OF SHOCK DESTRUCTION OF FACING STONE WITH APPLICATION OF PLASTIC SUBSTANCES

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A complex of problems solved at rock fracture technologies designing using plastic substances, should include an obligatory consideration of the following items: the account of the applied putties' properties; the account of the fractured rocks properties; the account of the beaten monoliths' required dimensions (blocks); the crack formation features account consisting in the substantiation of their form and dimensions; the applied techniques' features account lying in the substantiation of geometrical parameters of shot holes, stress concentrators on their walls or in face parts, sealing-in esturial parts or shot holes' walls, form and sizes of wedges, and also the energy of a single impact of the instrument.

At the mining technologies projecting it is necessary to take into account the fact that using a plastic substance characterized with low flowability will make the crack fronts intersection of natural or artificial origin and also the continuation of the formed crack formation even at their separate parts out on the free surface possible. The case demands the opening size of the intersected crack to be less than that of the crack formed using putties. Thereat it will not need a supplementary volume of the putty as in the fracture course it is not filtered through the fractured material.

The account of the properties of brittle materials fractured at the cap stone breaking-out using putties can be restricted by three basic rocks – granite, marble and limestone. Every of these rocks, being most commonly used, possesses a standard set of properties taken into account when projecting mining technologies (strength; volume of quarts; color (composition); structure; resistibility to mechanical effects, corrosion and environmental conditions; cold endurance; water absorption; wearability; maximal dimensions of monoliths (blocks) and their products. Other cap stone kinds breaking-out technologies can be considered as analogous ones to any of them.

The sizes of receiving sites of the facilities serving for rock sawing restrict the sizes of the cap stone monoliths. In this connection it is necessary to strain after the output of the monoliths (blocks) sized within the limits of the minimal to medium ones: width – 2-2,8 m; height - 1,2-1,7 m. For this purpose it is necessary to use the one-step breaking-out or to select the sizes of the broken-out monoliths multiple of these values due to their length variation. At the existing restrictions on sizes the weight of the monoliths (blocks) delivered to plants mustn't exceed 40 t, proceeding from the density of the rocks broken out.

When projecting mining technologies based on their fracture use with the help of putties, it must be born in mind that with the longitudinal crack growth their form gradually strains after the change from ellipse to circle. Together with this, the form of the cross cracks has a clearly defined circular character and doesn't depend on the size growth in the course of further delivery of putties. The impact or static origin cracks formation should happen at the possibly minimal consumption of the putty as its increase promotes the appearance of the flexural forces and differently directed curvature of the cracks' pattern.

The sizing of blind cracks obtained by the impact method depending on the volume of the introduced putties can be carried out on the basis of the computation founded on the principles of the quasistatic delivery of putties. The dimensions of the cracks obtained by the impact method and volumes of the putties necessary for this and calculated on the ba-

sis of the principles of the putties quasistatic delivery into the formed cracks will conform to the maximum magnitude of their values.

The role of the diameter of the shot hole filled with a putty substance, when projecting mining technologies, consists in the creation of preliminary conditions for providing a sufficient value of the breaking tension needed for the beginning of the crack's evolution. Thereat, it should be selected the minimal from the number of possible ones. The length of the shot hole, when projecting mining technologies, should be of the possibly maximal sizes. It is connected with the fact that the destruction mainly takes place in the area of the contact of the jib-stick and the putty. At this rate the maximal length of the shot hole will promote the maximum dimensions crack formation at the single introduction of this jib-stick. The following things depend on the shot hole diameter and length intercombination: the hole pitch in the line; the specific quantity of shot holes and specific consumption of the putty for the split-off surface; the diameter, internal design and length of the wedges applied; the possibility to perform the works with natural and artificial cracks redrilling or without it. Thereat, the character of the possible spatial arrangement of the shot holes serving to form longitudinal cracks allows using intermediate empty shot holes serving for the breaking-off works volumes reduction and the creation of an even main crack without cross ones.

The stress concentrators settled on the walls of the shot holes at the formation of longitudinal and cross cracks can be formed before the moment of the putties discharge from these holes, and also can be combined with it depending on the techniques and process solutions applied.

The total energy consumption to form the cracks of equal dimensions using putties will be as more as more the impact energy of the applied instrument is, on the condition that its size is sufficient for the beginning and continuation of the crack evolution.

The possibility of the beginning and continuation of the development process of the cross crack formed at the shot hole bottom level, all other things being equal, will be connected to the application necessity of the instrument with a greater single impact energy compared to the longitudinal crack gradually formed throughout the length of the shot hole.

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