

## TECHNOLOGY OF FILLING EXCAVATED SPACE

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**Abstract:** *In this thesis, the technology of filling the cavities dug in underground mining operations, which is used today and which we offer, is highlighted.*

**Key words:** *hydraulic method, filling material, working pipe, funnel, sieve.*

In this work, we will explain about the technology of filling the cavity, which was originally excavated by hydraulic method.

Preparation of the block for filling the excavated cavity consists in creating a barrier in the lower part of the cavity, and in order to hold the filling mass, a board is pressed against it. A drainage channel is built for water and mud to escape.

In order to prevent the leakage of sand and small pieces of filling materials, a thick layer is laid under the first filling layer, the vosstayyushi and ore-lowering solder compacts the board to the outer wall, and all the unconsolidated places are covered with hay or hemp-flax stems.

The pipe supplying the filling materials is installed along the entire length of the block (chamber), then the length of the pipe is reduced in the process of filling.

If it is difficult to separate water from the filling material, muddy water is collected at one end of the place where the filling hydromix flows, and drainage pipes are installed to drain the stagnant water from it.

Usually, they are made of wood, holes are drilled in the walls, and its outer side is covered with a material that is sewn together. Depending on the quality of the filling materials, 2-5% of it will leak out with water from the total mass.

The process of creating a backfill array begins after it is reported that the excavated space is ready to receive the backfill material. The operator opens the valves in the main part of the pipes carrying water and filler materials. The worker washes the pipe for 3-4 minutes, and then the filling materials are mixed with water in a mixing device. The formed hydro-mixture flows from the tank through the funnel into the galvir. The operator adjusts the density of the hydromix to the required size and simultaneously monitors the mixing funnel and the auger. Removes large pieces of material and rocks accumulated in the quarry.

Water, along with the small fraction of the filling material, filters out of the filled massif and falls into the drainage ditch of the freight horizon, joins the mine water and flows into the mine water storage capacity.

Compared to filling with dry materials, hydraulic filling is much more productive, it allows full mechanization of the process, better compaction of the array of filling materials, and reduction of the cost of 1 ton of ore. The main disadvantage of the hydraulic filling method is the high capital costs and siltation of the mine.

The most labor-intensive operation in the hydraulic filling process is the preparation for receiving the filling material: this operation accounts for 47-64% of the cost of filling the cavity. Therefore, it is important to use all waste from the enrichment plant as a filling material without cleaning it from soil and mud.

The addition of solidifying compounds during the formation of a filled array in an excavated space includes the following operations:

1. Isolation of the filling chamber from mixed mine solders.
2. Assembling the pipes of the supplier of filler material.
3. Placing solidifying material in the array.

When delivering the mobile mixing mixture in a pipe on the surface, it is lowered without a pipe through a pipe or a well, which serves to directly feed the cavity created by digging underground. Filling a void created by mining a steep or near-vertical ore body does not present much difficulty, and the fill material fills the void completely.

It is more difficult to fill the cavity in the mining of slopes and horizontal deposits, because it is important to fill the upper part of such a cavity. That's why filling materials from special wells is effective for such plots. When filling materials are lowered from one of the wells, air is released from the other. The diameter of the well is 150-300 mm.

Depending on the technical conditions of the mine, placement of filling material in the chamber excavated in a different scheme. Control of the complete filling of the chamber with the hardening mixture is carried out by visual observation, with a control well and with a special mine solder. The most effective method of control is the method

of remote control with a device indicating the filling status of the chamber in the "Mayak" mine.

The above methods for filling the excavated space are justified in theory and in mine fields. In my opinion, it is much more economical to fill the empty massif after excavation with a mixture made of concrete and reinforced concrete on the side walls, and the rock covering the middle part.

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