watches out for him, switches a flexible hose from one pipe union to another, gives required nozzles, etc.

A mobile industrial dust collector is able to move independently to a required object of cleaning within a given enterprise as a traction activator and dust catching devices are inside a mobile van, while detachable pipelines and nozzles are mounted from separate sections during cleaning. It reduces the total length of the vacuum system and helps avoid blockage of pipelines in the long run. There is also an opportunity of cleaning hard-to-reach surfaces. As the van is located outside the cleaned object, the air does not re-circulate in heavily polluted premises.

Mobile dust collectors are applicable to shops with any appliance saturation. The machines are able to collect great amounts of dust and transport it to unloading points without intermediate loading-unloading operations. Dust unloading is performed outside the industrial premise to avoid its secondary dust pollution.

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INCREASING THE EFFICIENCY OF DUSTING THE FIBER FILTER BY ELECTRIFYING THE FIBERS

The dedusting of aspirated air, which is removed from the sources of dust extraction during the processing of rock mass, in the aspiration-traction units of the mining and processing enterprises of the Kryvyi Rih region, as a rule, occurs by means of a two-stage purification system. The first stage of cleaning is preferably used cyclone apparatus, the second - scrubbers (Venturi pipes) or bag filters. A number of organizational and technical reasons (changing the aerodynamic parameters of dust flow, violation of schedules of unloading dust bins, etc.) causes the low efficiency of these systems, which leads to deterioration of sanitary and hygienic conditions of workers of industrial enterprises.

To increase the efficiency of industrial enterprises' aspiration systems, a dust chamber equipped with a modular fiber filter is proposed as the first stage of cleaning.

As the airflow passes through the fibers of the modular fiber filter, the kinetic energy of the dust particles is lost, which contributes to their intense coagulation with subsequent deposition. In addition to the purely mechanical coagulation of dust particles on the fibers, the latter create an electrostatic effect in the moving dust stream.

Fibers made from synthetic materials or particles themselves can receive and hold electrical charges. Thus there is an electrical interaction, which has a sufficiently large radius of action, which promotes the movement of particles to the fibers and touching the particles to their surface. Electric forces are widely used in practice to increase dust efficiency, and the charging of dust particles and fibers can occur spontaneously due to friction when hitting the particles against each other and when rubbing them against a solid surface (aspiration covers and pipelines, etc.). The polarity, the magnitude of the charges charged on the fibers, and the rate of their loss depend largely on their nature.

Electric forces contribute to the aggregation of dust particles and the formation of branched chain structures on the filter fibers. Particle aggregates are more easily captured by the filter, and the structures formed on its fibers serve as an auxiliary filter medium.

The study of the possibility of electrification of different types of fibers was carried out as follows. To determine the sign and measure the magnitude of the surface charge density, a PC2-3A device with a measurement range of 0 to 20 $\mu C/m^2$ was used. The sign of the electric charge was determined by the deviation of the arrow of the device from the middle of the scale (zero): right – «+», left – «-».

To obtain an electric charge on the fibers, they were rubbed on ebonite and fiber on fiber. The electric charge sign and the magnitude of its surface density were determined immediately after rubbing and again after 30-60-90 minutes to determine the amount of charge loss as a function of time.

Studies have shown that the highest positive triboelectric charge accumulates on the fibers of kapron and triacetate silk, and the smallest - on the fibers of nitron; the highest negative charge accu-

mulates on the polyvinyl chloride fibers and the smallest charge on the wool fibers.

The results of determining the dependence of dust capture efficiency on the magnitude of surface triboelectric charge accumulated on the dust chamber model showed that as the triboelectric surface charge of fibers increases, the dust capture efficiency of the filter increases and this growth is subject to parabolic law. The largest surface charge on kapron fibers was 4.0-4.2 $\mu C/m^2$ on polyvinyl chloride – 2.0-2.3 $\mu C/m^2$.

Over time, charged filter fibers will lose their charge. Even in conditions of normal relative humidity of ambient air (40-50 %) in 80-90 min. after pointing the charge at the fibers under study, its density decreases by 45-60 %. At relative humidity of more than 65% the loss of electric charge from the fibers occurs within 20-30 s.

However, when exposed to constant factors that can lead to the formation of charges on the fibers (the presence of electrically charged dust or dust, which when interacting with the fiber forms an electric charge), they can be stored for a long time.

Therefore, the action of electrostatic forces increases the efficiency of dust collection of dust chambers with a modular fiber filter. It is therefore of interest to investigate the effect of these forces on the capture of industrial dust in relation to existing types of fibers. These studies will help to scientifically justify the choice of fiber type, as well as to find new ways to ensure high dust content and ease of regeneration of the fiber filter under conditions of normal and high humidity, which occurs in the production conditions. The use of a dust chamber with a modular fiber filter will ensure the stability and efficiency of aspiration systems, which will improve the working conditions of workers of industrial enterprises.

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WORKPLACE RISK ASSESSMENT IN MONGOLIA: A CASE STUDY OF A MINING INDUSRTY

Mongolia is a developing country and faces many challenges to meet customer requirements related to social compliance, health and