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INFLUENCE THE RISK OF EXPLOSION IN BUILDINGS

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ABSTRACT

The research paper provides the potential danger of sediment dust, the need to take into account the amount of dust in assessing the risk of ignition in the production room. The data obtained made it possible to determine the time of collection of dust sufficient to form an explosive dust air mixture.

KEYWORDS

Amount of Dust, Dust Explosion, Dust-Air Mixture, Explosion Hazard, Concentration of Flames, Sedimentary Dust, Lower Limit.

INTRODUCTION

Today, it is known from the analysis of statistical indicators around the world that 94% of the explosion phenomena in industrial enterprises occur in technological equipment, ventilation systems, filter cameras and others. In 28% of cases, repeated explosions occur in buildings, in the process of ignition they participate in the form of waste products, as well as dust, construction facilities and equipment, which are released from technological equipment into the room. Sediment dust is potentially dangerous, and when assessing the risk of ignition in the room, it will be necessary to take into account its quantity. Therefore, since the amount of sediment dust causes explosions in the ignition spark, the determination of its amount in the air is one of the important issues and necessitates the research work.

It is known that the dust in the production room consists of two components, that is, dust in building structures in the ground, in the air ducts, as well as dust in the equipment. Ventilation and the total amount of dust in the room indicate the stability of the production room in the stationary technological and meteorological modes. The concentration of the raised dust in the production premises of the inspected enterprises, in rare cases, exceeds, this is less by 1% than dust value of the lower limit concentration of the flame. Therefore, when calculating the total amount of dust placed in the room, it will also be possible to ignore the amount of dust that has risen.

METHODS OF RESEARCH

This is evidenced by the fact that in the checked rooms in a normal technological mode, as a rule, the fulfillment of sanitary requirements is ensured. Compliance with sanitary rules directly ensures the safety of production explosions in cases without accident. Therefore, from the point of view of the explosion, the source of real danger is only

sediment dust, which, when switched to a suspended state, can form explosive dust-air mixtures. The separation and accumulation of flammable dust in many manufacturing enterprises means that the technological equipment works in the norm. The main reasons for the accumulation of dust in the production area have been studied as follows: absolute operation of technological equipment, the inefficiency of the systems of aspiration, the imperfection of the equipment and the application of manual labor, which make it difficult to aspirate. In many rooms under such conditions, dust accumulates constantly. This process was based on the model of the room dust regime. In the development of the model, both current and general cleaning work is carried out regularly in any production associated with the release of flammable dust into the room.

RESULTS

The percentage of dust that leads to the Upper Zone of the room is due to the speed of the rising air flow and the properties of the dispersed dust floor. Due to the fact that theoretically it is not possible to determine the speed of the air flow raised in production buildings.

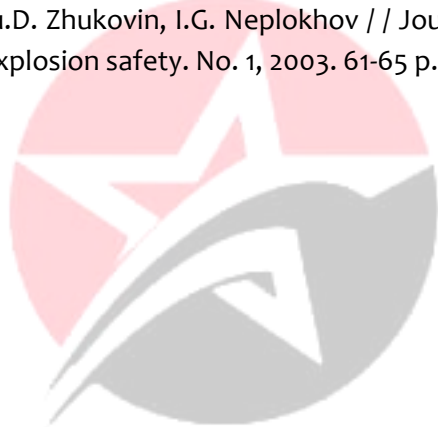
CONCLUSION

Analysis of experiments on industrial enterprises showed that natural concentration of dust in production areas is occasionally. Therefore, from the point of view of the risk of explosion, it is impossible to ignore the amount of dust that has risen against the sediments, and in addition, it is also necessary to pay attention to the amount of dust that has settled on the vertical surface and ceiling and to reduce the risk of its explosion.

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