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THE RELEVANCE OF THE NEED FOR DEVELOPING PREVENTIVE MEASURES TO OPTIMIZE THE WORKING CONDITIONS OF WORKERS EMPLOYED IN THE PRODUCTION OF ALUMINUM PROFILES

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Abstract
The developed set of preventive measures to optimize working conditions and preserve the health of workers involved in the modern production of aluminum profiles has not only hygienic, but also socio-economic importance. The implementation of measures can be successful only if there is a common interest of all workers and the participation of the enterprise administration, as well as, of course, regulatory departmental bodies.

Keywords: Occupational hygiene, production of aluminum profiles, permanent jobs, working conditions, harmful factors, a set of health measures.

Introduction

Hygienic assessment of working conditions is of great social importance due to the need for timely assessment of safe work experience under conditions of exposure to harmful factors, establishment of the frequency of medical examinations, benefits and compensation for work in hazardous working conditions, determination of priority areas for modernization of equipment and technological processes [1, 3, 4]. The production of aluminum profiles is characterized by conditions that can have an adverse effect on the health and performance of workers, which served as the basis for this study [2, 5, 6].

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Materials and Research Methods

The production that produces aluminum profiles is characterized by a combination of factors in the production environment, such as dust and gas pollution in the air of the working area, high air temperature, radiant heat, and noise, which have an adverse effect on workers. The sources of unfavorable factors in the production environment were technological operations leading to increased dust formation (cleaning equipment with compressed air, sorting cooled alloy, assembling electrode casings); equipment and vehicles that generate increased levels of noise and vibration; electric ovens that create increased levels of thermal radiation; irrational placement of artificial lighting sources. The reasons contributing to the formation of unfavorable working conditions were the imperfect organization of individual technological operations, architectural and structural features of industrial buildings, and irrational organization of sanitary facilities.

Results and Discussion

Measures to improve working conditions at an enterprise producing aluminum profiles should include measures to improve technology and equipment taking into account ergonomic requirements: measures to improve the microclimate and lighting, ventilation of workplaces, reduce noise, improve the work and rest regime of workers, and improve their sanitary facilities. When improving technology and equipment, the main focus should be on mechanization, maximum automation of monotonous types of work on conveyor lines and rationalization of jobs. The most radical measures to limit the adverse effects of dust and chemical factors are to reduce them at the source of formation (sealing, continuous humidification), as well as to remove them using mechanical local exhaust ventilation with a suction speed in the working opening for dust of at least 3-4.5 m/s, for gases 0.6-1.5 m/s. To ensure optimal thermal well-being of workers, the following hygienic microclimate regulations should be adopted in accordance with Sanitary rules and norms of the Republic of Uzbekistan No. 0324-16 “Sanitary and hygienic standards for the microclimate of industrial premises” (table).

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Table

Optimal and permissible microclimate standards in the working area of industrial premises

Period of the year	Indicators of industrial microclimate		
	Air temperature, degrees Celsius	Relative humidity in %	Air movement speed, m/sec
Warm period of the year	Optimal 23-25 degrees Celsius Permissible 22-30 degrees Celsius	40-60	no more than 0.3
Cold period of the year	Optimal 18-20 degrees Celsius Permissible 17-23 degrees Celsius	40 (no more than 75)	no more than 0.2

The illumination of workplaces must meet the hygienic requirements of Building Codes and Regulations 2.01.05-98 “Natural and artificial lighting”, taking into account the type of work performed. It is recommended to use local fluorescent lamps above work surfaces when cutting aluminum profiles. To reduce the noise intensity at the noise source, it is necessary to use damping pads on the colliding parts made of rubber or fiber. A good effect in large rooms is achieved by sound-absorbing barriers and absorbers suspended above noisy units. Those working in the pressing area must be provided with antiphons such as “Berushi”. To relieve neuropsychic stress, each workshop should be equipped with a psychological relief room. To prevent occupational diseases and reduce general morbidity, it is necessary to organize preliminary and periodic medical examinations in accordance with Order of the Ministry of Health of the Republic of Uzbekistan No. 200 “On approval of the Regulations on the procedure for conducting medical examinations of employees”.

All workers must be provided with protective clothing and personal protective equipment in accordance with the “Standard industry standards for the free issuance of protective clothing, special footwear and other personal protective equipment to workers and employees, depending on the nature of the work performed.” It is necessary to provide workers at the aluminum profile drying site with a set of drinking supplies: cooled green tea, sparkling water and others.

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Conclusion

Based on the conducted research, a set of preventive measures has been developed to optimize working conditions and preserve the health of workers involved in the modern production of aluminum profiles.

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