

МІНІСТЕРСТВО ОСВІТИ ТА НАУКИ УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
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such professions as steel smelter, steelmaker of the blast furnace and electrician for repair and maintenance of electrical equipment – 3,0, 1,7 and 1,6 respectively, for the operator of the collapse machine I_r was 0,9, also there was calculated the index for the refractoryman and for the machinist of the crane of metallurgical production – 0,6 and 0,5 respectively. In the agglomeration shop among the professions which had the largest I_r are the heater – 3,5, the bunkerer – 2,8, the foreman – 2,2, the electrician for repair and maintenance of electrical equipment – 1,7, the gas welder – 1,0 and the man engaged in agglomeration – 0,9. In the other shops the index of the professional risk was lower than 1, except the control panel operator – 1,01 (crimping shop), the man, who controls the condition of the hot rolling steel – 1,73 (hot rolling shop) and the gas welder – 1,07 (metallurgical furnace repair shop).

HYGIENIC EVALUATION OF MACHINE SHOP WORKERS

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Research objectives: To conduct hygienic evaluation of working conditions of the machine shop industry workers on the leading enterprises.

Methods and applications: There were analyzed 123 reports, including 38 reports of air research of a working area, 55 reports of meteorological factors research, 30 research protocols of the noise load.

Main results: The analysis of indicators of microclimate found that in the warm period, the average of a temperature was $18,07 \pm 2,050C$, humidity - $46,06 \pm 3,39\%$, air velocity - $0,4 \pm 0,04$ m/s. In the cold season temperature averaged to $12,69 \pm 0,570C$, relative humidity and air velocity - $37,13 \pm 2,2\%$ and $0,55 \pm 0,29$ m/s. Evaluation of a noise in the workplace of a turner – the noise in level of $84,24 \pm 1,02$ dB, so conditions can be classified as third class with first hazard degree. According to evaluation of the working area air it was found that there are chemicals in the air, but they do not exceed the maximum permissible concentration, so due to the presence of substances with unidirectional action (carbon monoxide, sulfur dioxide) working conditions was referred to third class with first hazard degree. The content of silica dust in the air of the working area doesn't exceed the MCL and averaged $3,98 \pm 0,4$ mg/m³. According to the evaluation of severity and intensity of a turner work, it was found that the working process include lifting and transporting loads up to 8 kg, static load is 345 kg*s with one hand, two hands - 10890 kg*s, is in an inclined position to 300 - 28.7% of the working shift and more than 300 - 17.3% working shift, precision work with high level of visual concentration with duration to 17.1% of working shift, 42% of the working shift include the monitoring of the production process without action, so, because of the evaluation of the work intensity, the working condition can be classified as third class with first hazard degree.

Thus, conditions of turner workplace according to Hygiene classification GN 3.3.5-8-6.6.1-083-2001 p. is a condition of third class with first hazard degree.

INDICATORS OF PHYSICAL DEVELOPMENT OF CHILDREN IN CONDITIONS OF ATMOSPHERIC POLLUTION OF METALLURGICAL CITIES

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Topicality. In modern industrial cities the formation of children's health is influenced by a set of conditions; and air pollution takes a leading place here.

Aim and objectives. Hygienic evaluation of indicators of physical development of children living in conditions of anthropogenic pollution of atmospheric air of modern industrial cities (on the example of Zaporizhzhia).

Materials and methods. To study physical development of children, medical examination of school-age children of the 1st and 2nd health groups in 3 regions of Zaporizhzhia has been conducted:

in a conventionally pilot region and in the 2nd and 3rd research regions. The study of physical development of children included the specification of height and weight, chest circumference and excursion.

Results: Body length of boys of 7-10 years old in the research regions was 4,5 cm (3,44%) longer in comparison with the indicator of the boys in the pilot region, as for the girls, it was 4,3 cm (3,31%) longer. The average indicator of weight of children of the research regions also exceeded the indicators of the pilot region children: about 3,3 kg (11,93%) among the boys and 2,7 kg (10,17%) among the girls. Boys' chest excursion in the research regions was lower: 5,27 and 6,37 cm ($p<0,05$), and 5,12 and 6,07 ($p<0,05$) was the girls'. There are more disharmonically developed children in the research regions than in the pilot region (31,6%, 33,4% and 25,31% correspondingly).

Conclusion: Younger pupils from the polluted regions, the activation of growing processes, probable exceeding of the weight indicators, chest excursion decrease have been identified. It is known that in modern circumstances delayed and accelerated development of children should be considered as a factor of pathology.

EVALUATION OF THE HEALTH STATUS OF THE EMPLOYEES OF THE LEADING METALLURGICAL ENTERPRISE

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The purpose and objectives of the study: To assess the health status of the employees of the leading metallurgical enterprise.

The methods and their application: The analysis of the health status of workers was conducted in accordance with the sick lists and reports about the causes of morbidity with temporary disability .

The obtained results: The analysis of morbidity with temporary disability (TD) found that at this enterprise the TD level during the analyzed period was $106,15\pm 4,34$ cases per 100 workers (above the average level), $1388,62\pm 70,9$ days of incapacity for work per 100 employees (the high level) and the average duration of the case was $13,08\pm 0,21$ days. It was found that in the structure of the TD by the number of cases in the percentage to the total number , the first ranking places at the enterprise were occupied by the respiratory system diseases (45,9 %), injuries and poisoning (11,6 %), the diseases of the musculoskeletal system, connective tissue (9,7%) and cardiovascular system (7 %), the diseases of the digestive system (6,5 %). The workers' morbidity structure didn't differ from the previous one in the percentage by the number of disability days.

In the workers' morbidity structure of the given metallurgical enterprise by the number of cases and disability days per 100 employees to the top five diseases belong the diseases of the respiratory system $48,68\pm 1,1$ and $421,8\pm 12,11$ respectively, on the second place are injuries and poisoning by the number of cases $12,33\pm 0,27$ per 100 employees and the number of days $259,49\pm 4,2$ per 100 employees, the diseases of the musculoskeletal system and connective tissue made up $10,28\pm 0,36$ and $142,46\pm 6,2$ respectively , the diseases of the cardiovascular system by the number of cases - $7,43\pm 0,35$, by the number of days - $121,9\pm 6,9$, on the fifth place are the diseases of the digestive system, which by the number of cases amounted to $6,85\pm 0,35$ per 100 employees, by the number of days per 100 employees - $113,89\pm 6,68$.