ISNN 3030-3907

2026
JUNE
ISSUE - 6
VOLUME - 9

DEVELOPMENT OF SCIENCE

scientific journal



Development of science

Ilmiy jurnal

IYUN 2026
Issue - 6, VOLUME – 9

ISSN 3030 -3907

Ilmiy jurnal OAK rayosatining 2024 yil 27 sentabrdagi 361-son qaroriga asosan 02.00.00 kimyo fanlari hamda 2025 yil 12 fevral 367- son qaroriga asosan 05.00.00 texnika fanlari bo‘yicha falsafa doktori (PhD) va fan doktori (DSc) ilmiy darajasiga talabgorlarning dissertatsiya ishlari yuzasidan dissertatsiyalari asosiy ilmiy natijalarini chop etish tavsiya etilgan milliy ilmiy nashrlar ro‘yxatiga kiritilgan.

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Development of science ilmiy jurnali 2024 yil 15 aprel kuni №256445 sonli guvohnoma bilan Davlat ro‘yxatidan o‘tgan.

To‘plam elektron ko‘rinishda (pdf formatida) mualliflarga taqdim etiladi. To‘plamga kiritiladigan maqolalarning mazmuni, ulardagi statistik ma’lumotlar va me’yoriy hujjatlarning to‘g‘riligiga hamda har qanday fikr - mulohazalarga mualliflarning o‘zlari mas’ul hisoblanadilar. Talablarga javob bermaydigan maqolalar to‘plamga kiritilmaydi. Tashkiliy qo‘mita maqola matnini qisqartirish, qisman tuzatish kiritish, seksiyalarga joylashtirish huquqiga ega.

ISSN 3030-3907

ANALYZING THE EFFECTIVENESS OF WORKPLACE CONDITIONS AND EQUIPMENT INJURY RISK ASSESSMENT

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Abstract. This article analyzes the working conditions within manufacturing enterprises, the injury risks associated with production equipment, as well as the challenges related to occupational accidents and diseases. Furthermore, the paper presents scientific proposals and practical recommendations developed by the author to address these critical issues.

Keywords: Working conditions, workplaces, workplace certification (assessment), similar workplace, work zone (workspace), personal protective equipment (PPE), harmful production factors, working environment.

Annotatsiya. Ushbu maqolada ishlab chiqarish korxonalaridagi mehnat sharoitlari, ishlab chiqarish uskunalari bilan bog‘liq shikastlanish xavflari, shuningdek, ishlab chiqarishdagi baxtsiz hodisalar va kasb kasalliklari bilan bog‘liq muammolar tahlil qilingan. Bundan tashqari, ishda ushbu jiddiy muammolarni hal qilish uchun muallif tomonidan ishlab chiqilgan ilmiy takliflar va amaliy tavsiyalar taqdim etilgan.

Kalit so‘zlar: Mehnat sharoitlari, ish o‘rinlari, ish o‘rinlarini attestatsiyadan o‘tkazish (baholash), bir xil (o‘xshash) ish o‘rni, ish hududi (ish zonasi), shaxsiy himoya vositalari (SHHV), zararli ishlab chiqarish omillari, ish muhiti (mehnat muhiti).

Аннотация. В данной статье анализируются условия труда на производственных предприятиях, риски травматизма, связанные с производственным оборудованием, а также проблемы, связанные с несчастными случаями на производстве и профессиональными заболеваниями. Кроме того, в работе представлены разработанные автором научные предложения и практические рекомендации по решению этих серьезных проблем.

Ключевые слова. Условия труда, рабочие места, аттестация (оценка) рабочих мест, аналогичное рабочее место, рабочая зона (рабочее пространство), средства индивидуальной защиты (СИЗ), вредные производственные факторы, рабочая среда (производственная среда).

INTRODUCTION.

When examining current occupational safety and health (OSH) activities within manufacturing enterprises, workplace certification regarding working conditions and equipment injury risks holds a pivotal position. Based on the outcomes of this certification, targeted measures are formulated to enhance working conditions, an information database is established to evaluate health degradation risks, and employees' legal rights to receive compensation for working in unfavorable conditions are determined.

Workplace certification based on working conditions is a mandatory measure regulated in accordance with Appendix 1 of Resolution No. 263 of the Cabinet of Ministers of the Republic of Uzbekistan dated September 15, 2014. This assessment is conducted to enable employers to objectively evaluate the conditions under which their personnel work and, where necessary, implement measures to improve them. Statistical data indicates that adverse effects can occur even in the most modern workplaces, thereby creating a continuous necessity for regular workplace assessments [9].

The primary relevance of workplace certification lies in preserving employee health and preventing occupational diseases. This assessment is executed by the employer in collaboration with a specialized certifying organization engaged on a contractual civil-law basis. While standard certification is conducted once every five years, an unscheduled assessment becomes mandatory if the organization establishes new workplaces, modifies technological processes, or alters production equipment.

The ultimate objective of certifying workplaces for working conditions and equipment injury risk is to comprehensively evaluate the working environments, the physical severity and intensity of labor processes, and equipment safety hazards. This complex procedure aims to assess harmful and dangerous production factors, thereby aligning them with statutory requirements. Ultimately, certification serves to uphold citizens' constitutional rights to a safe and healthy working environment that complies with established occupational safety and health (OSH) norms, rules, and guidelines, while actively identifying unfavorable, harmful, and hazardous production factors.

During the research process, methods such as the analysis of scientific and academic literature, comparative analysis, and synthesis were utilized. Social and labor relations associated with the assessment of working conditions within enterprises were comprehensively investigated.

A range of regulatory documents and literature concerning workplace certification was analyzed. One of the most critical legal instruments in the labor sector is the Labor Code of the Republic of Uzbekistan, which establishes

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occupational safety and health requirements, employee rights, and employer obligations.

Article 352 of the Labor Code of the Republic of Uzbekistan mandates that employers must ensure working conditions that meet safety and hygiene requirements. Furthermore, this Code stipulates that the State guarantees the protection of workers' rights to labor under conditions aligning with OSH requirements [2].

The International Labour Organization (ILO) Occupational Safety and Health Convention No. 155 was ratified in accordance with Law of the Republic of Uzbekistan No. LRU-969 dated October 2, 2024. Article 16 of this Convention states: "Employers shall be required to ensure that, so far as is reasonably practicable, the workplaces, machinery, equipment and processes under their control are safe and without risk to health." Additionally, the Decent Work Country Programme for the Republic of Uzbekistan for 2021–2025 was signed between Uzbekistan and the ILO. Within the framework of this program, continuous operations are being conducted to improve the regulatory framework governing labor relations, expand employment and decent work opportunities for youth, women, and socially vulnerable segments of the population, and ensure their access to quality, inclusive education and social protection that fosters social dialogue [7].

Regarding the impact of hazardous production factors, U.R. Yuldashev, O.D. Rakhimov, R.T. Khojakulov, and O.T. Hasanova note in their textbook Occupational Health and Safety: "Occupational diseases in production arise due to dust exposure in the workplace air, gases, noise, vibrations, and fluctuations in air temperature, pressure, and humidity. Prolonged exposure of the human body to adverse production factors can cause an employee to contract an occupational disease, potentially leading to temporary or permanent disability" [5].

In accordance with labor legislation, the strict execution of the following measures must be guaranteed within enterprises, organizations, and institutions in the field of occupational safety and health:

Systematic organization of OSH operations: Creating favorable working conditions for personnel, training employees on OSH rules and standards, improving their knowledge level, and developing a preventive action plan to avert accidents and occupational diseases.

Workplace certification and provision: Conducting assessments regarding working conditions and equipment injury risks, and providing workers with special clothing, footwear, personal protective equipment (PPE), and dairy products free of charge.

Administrative and public control: Establishing a structured (three-stage) oversight system by employers and trade union committees to ensure strict

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compliance with established OSH rules and standards within enterprises, organizations, and institutions.

Evaluating the compliance of working conditions with occupational safety and health (OSH) requirements incorporates the following core comprehensive assessments:

Assessment of the compliance of working conditions with industrial hygiene standards;

Assessment of workplace injury risks;

Assessment of the adequacy of personal protective equipment (PPE) provision for employees;

Comprehensive evaluation of working conditions at the workplace.

The assessment of working conditions against hygiene standards is carried out by specialists from the certifying organization. This evaluation must utilize methods prescribed by regulatory legal acts and other relevant documents, alongside verified and calibrated measuring instruments. The assessment of compliance with hygiene standards is conducted in accordance with criteria defined by the Hygiene Classification of Working Conditions, focusing on the indicators of harmfulness and hazard levels of environmental factors, as well as the physical severity and intensity of the labor process.

a) Based on the assigned levels of individual sub-factors within the production environment and labor process, each comprehensive environmental and operational factor is evaluated as follows:

- According to the highest class and degree of harmfulness;
- If 3 or more factors belong to class 3.1, the overall assessment of working conditions is adjusted to class 3.2;
- If two or more factors of classes 3.2, 3.3, or 3.4 are present, the overall working conditions are graded one step higher.

b) A general compliance assessment of working conditions against industrial hygiene standards is determined based on the established tiers of each factor within the production environment and labor process:

- According to the highest class and degree of harmfulness;
- If 3 or more factors correspond to class 3.1, the overall evaluation aligns with class 3.2;
- If two or more factors of classes 3.2, 3.3, or 3.4 exist, the working conditions are graded one step higher.

c) When the duration of exposure to harmful production factors is reduced (protection by time), working conditions may be evaluated as less harmful, provided the rating does not fall below class 3.1.

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d) Production environment and labor process factors (sub-levels) that are absent at the certified workplace may be omitted from the Working Conditions Card [9].

Based on these certification findings, additional annual paid leave is granted to employees working under unfavorable conditions.

Table 1.

The DURATION of annual additional leave for employment under unfavorable and specific working conditions

Working Conditions Class	Degree / Sub-class	Duration of Additional Leave (in days)
Class 1: Optimal	-	0
Class 2: Permissible	-	0
Class 3: Harmful	**3.1** (1st Degree)	3
	3.2 (2nd Degree)	4-6
	3.3 (3rd Degree)	7-12
	3.4 (4th Degree)	13-18
Class 4: Hazardous	-	19-24

The assessment of the injury risks associated with production equipment is conducted by analyzing technical documentation containing safety requirements for executing operations, as well as through external visual inspections of the production machinery during routine operations to verify its compliance with the requirements of occupational safety and health legislation.

Assessing the injury risks of tools and appliances is performed via external visual inspections and auditing their current status to ensure full compliance with the requirements of occupational safety and health legislation.

The assessment of providing employees with personal protective equipment (PPE) is carried out by sequentially executing the following procedures:

- Comparing the nomenclature of the actually issued PPE with the relevant model norms established for the free provision of PPE to employees;
- Verifying the availability of certificates (or declarations) of conformity for the PPE distributed to personnel;
- Auditing the established procedures and regulations governing employee PPE provision;
- Assessing the compliance and suitability of the issued PPE in relation to the actual working conditions at the workplace.

A comprehensive evaluation of workplace conditions incorporates the following data:

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- The established class/level of working conditions based on the results of the compliance assessment against industrial hygiene standards;
- The risk level of working conditions categorized by equipment injury hazards;
- The outcomes and findings from the assessment of employee PPE provision.

All certification materials from the enterprise where the workplace assessment was conducted must undergo a mandatory state expert evaluation by the competent labor authorities.

The results of the workplace certification are utilized for the following purposes:

- Developing and implementing measures to align working conditions with the requirements of occupational safety and health (OSH) norms, rules, and guidelines;
- Establishing legal benefits and compensations prescribed by legislation for employees engaged in heavy labor, unfavorable, harmful, and/or hazardous environments, or other special working conditions;
- Informing employees about current workplace conditions, existing health risks, protection measures against harmful and/or hazardous production factors, and the specific compensations they are entitled to for heavy, unfavorable, harmful, or other special labor conditions;
- Monitoring and controlling working environments at the workplace;
- Conducting occupational risk assessments;
- Providing workers with appropriate personal protective equipment (PPE) and collective protective equipment;
- Compiling statistical reports on the state and dynamics of working conditions;
- Confirming and certifying that the overall organization of OSH operations complies with statutory safety requirements;
- Resolving occupational origin issues and verifying diagnoses when a professional disease is suspected;
- Reviewing and settling disputes or disagreements regarding the provision of safe working conditions for personnel;
- Providing sanitary, domestic, and medical services to employees in strict accordance with OSH regulations, standards, and directives.

In conclusion, it is imperative to place significant emphasis on the quality of workplace certification regarding working conditions and equipment injury risks. The documentation and assessment materials generated by certified enterprises must strictly undergo a state expert evaluation by competent labor authorities. Furthermore, it is highly advisable to continuously optimize and improve the existing frameworks for diagnosing, registering, and preventing occupational diseases linked to hazardous and harmful working environments.

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