

Safety Measures at The Construction Site

Mirakhmat Mirvokhid ugli Mirvaliyev

Student of faculty "Construction" at Yeoju Technical Institute in Tashkent, Tashkent,
Uzbekistan

Abstract: This research paper deals with labor protection measures during the installation work of a 9-storey residential building with built-in office premises. The aim of these measures is to prevent accidents and injuries that may arise during the performance of work.

Keywords: Accidents, construction site, labor protection, residential building.

INTRODUCTION

The basis of the country's socio-economic development is the formation of a safe and comfortable environment for human life.

The construction industry plays a key role in creating the material and technical base of all spheres of the economy and meeting the needs of the population in comfortable housing, services of social and engineering infrastructure, as well as cultural leisure.

The state policy in the field of construction is aimed at increasing the potential of the industry through the effective use of innovations, investments, labor and material resources in order to ensure the successful implementation of programs for the socio-economic development of the country, regions and industries.

METHODS OF RESEARCH

At the same time, there are the following systemic problems that negatively affect the development of the construction industry:

Regulatory documents in the field of technical regulation of urban planning activities are significantly outdated and do not take into account modern methods of architectural and construction work, the possibilities of widespread use of energy-efficient technologies and energy-saving materials; the absence of master plans of most settlements or their non-observance during the construction of buildings and structures negatively affects the integrated development of territories, the location of production and infrastructure facilities, the development of entrepreneurship, business and investment activity; trends in the existing design and survey work market often do not create prerequisites for the progressive development of the design business, the creation of high-tech, modern and unique architectural projects; imperfection of licensing procedures in the field of urban planning activities and, as a consequence, the involvement of workers in construction and installation work on an illegal basis (without proper documentation), the growth of unauthorized buildings, the lack of the necessary competence and qualifications of workers of construction organizations negatively affect the investment attractiveness of the construction industry and lead to a violation of safety requirements during the implementation of construction and installation work and the subsequent operation of the constructed buildings and structures; the low level of implementation of modern information and communication technologies does not allow ensuring maximum transparency and efficiency in the provision of public services to participants in investment processes and subjects of urban planning.

Occupational safety measures include organizational measures-

- [1] Conducting safety briefing.
- [2] Training workers in safe working methods.
- [3] Providing workers with instructions and memos, and the construction site with posters, warning notices.

Technical activities include-

- [1] installation of fences.
- [2] installation of signaling devices.
- [3] the use of collective and individual protective equipment.
- [4] use in the process of construction and installation works of modern machines and equipment, rigging mechanisms and devices.

Particular attention should be paid to the implementation of installation work in accordance with the design of production work.

RESULTS

The scope of work performed during the preparatory period of construction includes-

- [1] Layout.
- [2] breakdown of axes.
- [3] arrangement of fences.
- [4] arrangement of temporary roads.
- [5] arrangement of temporary networks.
- [6] arrangement of temporary buildings and structures

Immediately before the installation of the systems, the following works are performed-

- [1] The entrance of the truck crane and vehicles for the supply of equipment and workpieces are freed from building structures and debris.
- [2] Preparation of a site for storage of equipment and blanks.
- [3] Around the construction site, a security fence was installed to prevent unauthorized persons from entering the territory and dangerous zones and to protect material assets.

The height of the fence is 2 m.



On the construction site, there are two entrances from different sides, which ensures traffic safety and the passage of fire engines, as well as free passage to the building and temporary structures.



Fig.2. Not using enclosures in construction site

The nature of the roads built on the construction site is constant. The width of the road for two-way traffic is assumed to be 5 meters. Road coverage - crushed stone. The speed of movement of vehicles on straight sections is 10 km / h. The source of temporary water supply of the construction site, which provides household and drinking needs and fire extinguishing, is the constantly existing network of the city water supply system. A ring-shaped wiring diagram with pipelines with a diameter of 83 mm was adopted. The number of fire hydrants is 2, the distance between them is 50 m, between the hydrants and the road - at least 1.5 m.



Fig.3. Suspension height of the wires

The source of power supply is the existing transformer substation 2x630 KW. The wiring diagram of power supply and lighting networks is dead-end. The suspension height of the wires above the roads is 6 m. Lighting systems for working, security and emergency purposes have been adopted. To illuminate the construction site, P-35 floodlights with 1 kW incandescent lamps were installed in the amount of 4 pcs. The floodlights are installed along the perimeter of the construction site, the height of their installation is 6 m. The illumination of the site is 3 lux.

The parking places for PP-405.2A rail cranes are calculated in the project of the work on the basis of the length of the jib outreach. On the construction site plan, parking is indicated, however, there may be intermediate ones. Power lines do not enter the crane's hazardous area. Since the road along which the crane is moving falls all into the danger zone, a detour is arranged. There are warehouses in the crane coverage area. The third danger zone of the crane is fenced with flags.

CONCLUSION

Consequently, the sanitary service project provides for transportable temporary container sizes in terms of 6x3m. The temporary structures include-

- [1] checkpoint-timetable.
- [2] foreman's office.
- [3] room for eating and heating workers.
- [4] Pantry.
- [5] dressing rooms.
- [6] shower rooms.
- [7] restroom.

The calculation of the areas was made in the project of the work.

On the construction plan, utility rooms are located outside the crane operation area at a distance of 10 m from the building axis. Fire breaks 1.5 m wide are arranged between the utility rooms. On the construction plan, the warehouses are located in the area of the crane, which makes it possible to mount the equipment more quickly. The crane is designed in such a way that under any conditions, both in working and not in working condition, its stability is ensured. Lifting capacity indicator (or an indicator of boom reach and lifting capacity), showing the values of the lifting capacities of the crane, depending on the reach of the jib, is installed at the bottom of the boom equipment in the operator's field of view and allows you to visually determine what load can be lifted by the crane at a given boom position. On automobile cranes, automatic hazardous voltage signaling devices ASON are installed, warning the driver by turning on emergency light and sound alarms about the approach of the crane boom to a dangerous distance to a single or multiphase power line. To prevent overturning of shooting cranes, they are equipped with limiters for carrying capacity or load moment. For each type of jib crane, its own scale is made, corresponding to the load characteristics of the crane with this type of equipment. The position of the scale on the boom is adjusted by installing the crane on a horizontal platform and applying a calibrated weight in accordance with the instructions.

Materials, workpieces and equipment are laid as follows-

- [1] large-sized and heavy equipment and its parts - in one row on inventory lining, wooden with a section of 20x16 or 15x10 cm.
- [2] pipes up to 300 mm in diameter - in a stack up to 1.5 m high on linings and gaskets with end stops.
- [3] the bottom row of pipes is laid on pads, reinforced with inventory metal shoes or end stops, securely fixed on the platforms.
- [4] materials, blanks and equipment are placed on leveled and rammed platforms. At the same time, measures have been taken against spontaneous displacement of stored items.
- [5] aisles 1m wide are made between the racks.

- [6] Warehouse areas are provided with driveways for vehicles, in accordance with the regulations.

REFERENCES

- [1] Iskandarov, Erkin Borievich. "COMPOSITION OF INDICATORS FOR ASSESSING THE INNOVATIVE POTENTIAL OF CONSTRUCTION ORGANIZATIONS." *Theoretical & Applied Science* 5 (2020): 12-14.
- [2] Sultanov, Takhir, Ravshan Nurimbetov, and Azizbek Zikriyoev. "Innovative health and safety standards is a sustainable development performance for the construction sector of Uzbekistan." *E3S Web of Conferences*. Vol. 97. EDP Sciences, 2019.
- [3] Nurimbetov, Ravshan, and A. Zikriyoev. "Modern challenges in health and safety at construction industry." *Бюллетень науки и практики* 5.3 (2019): 262-271.
- [4] Zikriyoev, Aziz Sadulloevich, and Robert Arthur Crane. "PREVENTION OF SOCIAL COST IN OCCUPATIONAL HEALTH AND SAFETY IS SUSTAINABLE DEVELOPMENT FOR THE CONSTRUCTION INDUSTRY." *Theoretical & Applied Science* 6 (2019): 263-273.
- [5] Khamidullaevich, P. R., Vladimirovna, S. E., & Gayrat, U. R. (2019). On peculiarities of formation of the thermal mode in operating panel buildings. *International Journal of Scientific and Technology Research*, 8(10), 2533-2535.
- [6] Shipacheva, E., R. Pirmatov, and D. Sharipova. "Exploration of heat transmission method in external enclosing structures of buildings under impact of solar radiation in the republic of Uzbekistan." *International Journal of Scientific and Technology Research* 8.12 (2019): 3415-3418.
- [7] Shi, Z., et al. "Modelling integrated risks of overseas power construction project: A case study in Uzbekistan." *Journal of Engineering Science and Technology Review* 9.4 (2016): 90-97.
- [8] Hughes, Phil, and Ed Ferrett. *Introduction to health and safety in construction*. Routledge, 2012.
- [9] Pirmatov, R. K., & Rashidov, J. G. U. (2020). Research Of The Acoustic Parameters Of Halls And Practical Methods Of Eliminating Acoustic Defects. *The American Journal of Engineering and Technology*, 2(12), 7-13.
- [10] Lingard, Helen, and Stephen M. Rowlinson. *Occupational health and safety in construction project management*. Taylor & Francis, 2005.
- [11] Mavlyanova, Nadira, et al. "Seismic Code of Uzbekistan." *13th World Conference on Earthquake Engineering*. Vol. 1611. 2004.
- [12] Rashidov, T., L. Plotnikova, and Sh Khakimov. "Seismic hazard and building vulnerability in Uzbekistan." *Seismic Hazard and Building Vulnerability in Post-Soviet Central Asian Republics*. Springer, Dordrecht, 1999. 147-180.