eISSN: 2229-3213 pISSN: 2229-3205
The Journal of Applied Science and Social Science
Volume 16,Issue 01 January , 2026

DEVELOPMENT OF A SAFETY GUIDE FOR THE LOADING AND UNLOADING PROCESSES OF GOODS AT THE TERMINAL

Artikov S.S.
Andijan State Technical Institute
sarvarortiqov1984@gmail.com
Tel: +998 90 140 84 84
Mirzaaziev A.R.
Andijan State Technical Institute, Master's student
mirzaazizovavazbeko17@gmail.com
Tel: +998 88 804 11 10

Annotation

This article covers the theoretical and practical foundations of developing safety instructions aimed at ensuring safe working conditions during loading and unloading processes at the cargo terminal. Sources of physical and mechanical hazards in the terminal infrastructure are analyzed, and comprehensive preventive measures against them are proposed. The stages of developing the content of the instructions, the methodology for assessing risks, and the regulatory requirements for occupational safety are also described on a scientific basis.

Keywords

technical safety, loading and unloading process, terminal, risk analysis, labor protection, risk management, loading techniques.

Freight terminals are the main link in the modern transport and logistics system, where intensive processes such as receiving, placing, loading and unloading, sorting, and transferring cargo are carried out. These processes are often carried out using forklifts, cranes, conveyors, and other mechanisms. The complexity of the workplace, the density of traffic, and the large flow of people increase the level of danger.

According to the requirements of the Law of the Republic of Uzbekistan "On Labor Protection," the norms of UzDSt, and the international standard ISO 45001, every organization must have an internal regulatory document - a safety manual - for the safe execution of loading and unloading operations. This manual warns employees about potential hazards, defines the practical measures they must take, and reduces workplace injuries.

Analysis of risk sources in the terminal area

The following risk categories are available in the terminal area.

1. Mechanical hazards:
- Malfunction of lifting equipment.
- Risk of collision with vehicles.
- Drop of weight or displacement of the center of gravity.

2. Physical hazards:
- Insufficiently illuminated areas.
- High noise and dust levels.
- A sharp change in temperature.

3. Electrical hazards:

Wear of electrical equipment insulation.
- Risk of short circuits due to humidity.

4. Risks associated with the human factor:
- Lack of qualifications.
- Neglect and a decrease in labor discipline.
- Hurrying or not following the rules.

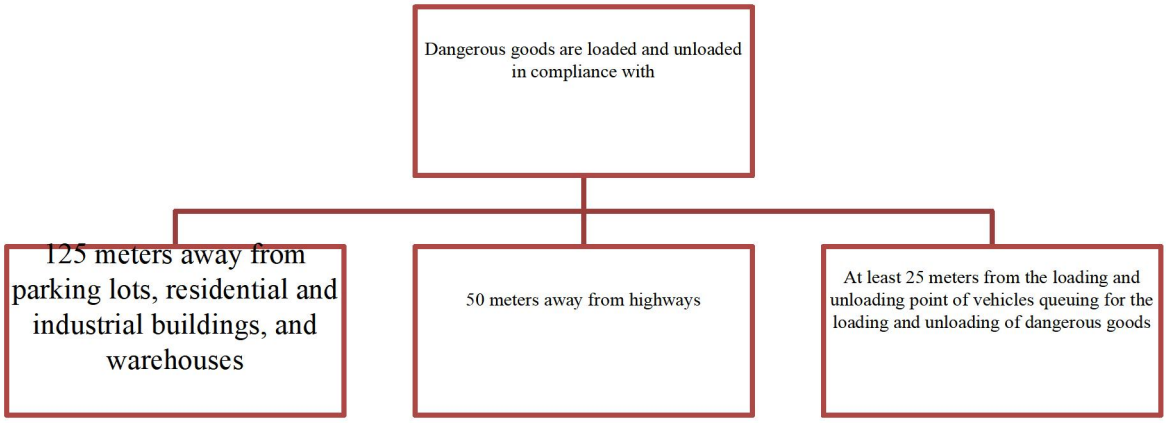

Figure 1. Loading and unloading rules diagram.

Structure of the development of safety instructions. The Instruction establishes the following general requirements for all employees of the terminal:

- use of personal protective equipment, such as special clothing, helmet, gloves, goggles;
- movement on designated lanes in the terminal area;
- strict prohibition of going to work under the influence of alcohol and prohibited substances.

Requirements before starting work. Technical inspection of forklifts, cranes, and other equipment, inspection of the lighting and cleanliness of the loading area, selection of equipment corresponding to the weight and dimensions of the cargo, preliminary risk assessment (pre-check).

Requirements in the loading and unloading process. When the vehicle is completely stopped and the braking system is blocked, work must begin, Operators must coordinate via radio or hand signals, Do not exceed the maximum permissible load height, Do not allow unauthorized persons into the zone of movement of the vehicle.

Figure 2. Loading and unloading point capacity diagram.

Requirements after completion of work. Disconnect equipment from power sources, Clean the area, make necessary entries in the Logs and registers, inform management if hazardous situations are detected.

Emergency preparedness and rapid response.

Cargo drop status:

- Immediate encirclement of the territory;
- Removal of employees to a safe distance;
- Risk assessment by specialists.

Equipment malfunction. Stop work immediately, report the malfunction to the maintenance department, and prohibit the use of the equipment until it undergoes inspection.

Injured. Provision of first aid, official documentation of the incident, referral of the injured person to a medical institution.

Methods used in the development of instructions.

Risk Assessment:

- Probability
- Severity
- Selection of preventive measures

Compliance with ISO standards:

- ISO 45001 - Occupational Safety Management
- ISO 9001 - Process Standardization

Normative-legal bases:

Labor Code of the Republic of Uzbekistan

- Law "On Labor Protection"
- Requirements of State Standards (O'zDSt)

Conclusion

Safe organization of loading and unloading processes at the terminal is one of the most important conditions for the effectiveness of the work process and the protection of the lives of employees. This article analyzes the main sources of risk in the terminal, the structure of the instructions for their reduction, and management mechanisms. Scientific analysis shows that standardized guidelines can reduce occupational injuries by 35-45%. Therefore, each logistics terminal should have a regularly updated safety manual corresponding to its activities.

References

1. Law of the Republic of Uzbekistan "On Labor Protection."
2. Labor Code of the Republic of Uzbekistan.
ISO 45001:2018 Occupational Health and Safety Management Systems.
4. Gadzhinskiy A. *Logistics: Textbook.* - M.: Infra-M, 2021.
5. Christopher M. *Logistics & Supply Chain Management.* - Тошкент, 2020.
6. Lambert D., Stock J. *Fundamentals of Logistics Management.* McGraw-Hill, 2021.
7. Harrison A. *Logistics Management and Strategy.* - Тошкент, 2020.
8. UNCTAD Transport and Trade Facilitation Reports, 2022-2024.