

Lecture 8. Fundamentals of designing transport complexes

Purpose of the lecture: select the type, technical equipment and determine the main parameters of a complex mechanized and automated warehouse at a railway station, on the access roads of enterprises and organizations on the basis of real cargo flows and station operation technology

Keywords: design, Building codes and regulations, Code of Practice, Territorial building codes

Types of lectures: Lecture-visualization.

8.1. Stage of design and the composition of the project of the transport and cargo complex

8.2. The structure of regulatory documents in construction

8.3. Requirements for design, construction and technical equipment of warehouse stocks

8.1. Stage of design and the composition of the project of the transport and cargo complex

The construction of TGCs can conditionally be divided into four main stages:

- Creation of the concept of TGCs (justification of investments in construction);
- design of TGC facilities and approval of documentation;
- construction of TGC facilities;
- installation and installation of equipment.

Already when formulating the design assignment, the customer faces serious questions, namely: what area and building height are needed, how to place a building spot on the land, how many gates will be in the building, what are the requirements for building structures and many others. To answer these and other questions, it is necessary, before the start of the design process, to imagine how the warehouse will work: transport scheme, basic technological processes, types of hoisting machines and equipment niya, composition and area of household and office premises, etc.

8.2. The structure of regulatory documents in construction

The legal basis of the technical policy implemented in the TGCs is the Constitution of the Russian Federation, federal and regional laws, regulations of the Russian government regarding the design, construction and operation of TGC facilities.

Such legal acts include documents establishing requirements for the protection of the natural environment, the rules of land use, and the safety of life; documents defining the rules of financial activity of enterprises, tax policy of the state, etc. Technical solutions in the projects of reconstruction and construction of transport and cargo complexes are regulated by a system of regulatory documents, including:

- Building codes and regulations (SNiP);
- Code of Practice (SP);
- Guiding system documents (RDS);
- Territorial building codes (TSN);
- Departmental (industry) building codes (BCH), etc.

8.3. Requirements for design, construction and technical equipment of warehouse stocks

The main construction site of TGC is a warehouse. Warehouse design is a complex multi-stage process. It is carried out taking into account many parameters in cooperation with the customer and construction design organizations. The purpose of the warehouse design is to develop an optimal technological scheme of the warehouse based on the planned cargo flows. During the design of the warehouse:

- analysis of warehouse cargo flows;
- determination of storage conditions for goods;
- development of the technological scheme (technology) of the warehouse;
- determination of the geometric dimensions of the main and auxiliary zones warehouse, determining their relative position;
- selection of the necessary equipment in quantity and quality;
- calculation of the required man-machine resources;
- optimization of warehouse resources;
- definition of requirements for the warehouse information system.
- Warehouse building is a system consisting of interconnected, interdependent and complementary subsystems, which together ensure the purpose of the building and its functioning during a given life cycle. There are three such subsystems: construction, technological and life-unsupporting - engineering.

The dominant one, which determines the functional purpose, dimensions, architecture and other characteristics of the building, is the technological subsystem consisting of sets of technological and auxiliary equipment, technological structures and technical means (hoisting and transporting machines and equipment, warehouse equipment, bag-sorting and packaging plants, etc.). .P.).

Questions:

1. What is the purpose of developing the concept of THC?
2. What are the sections of the TGC project.
3. What documents are included in the system of regulatory documents in construction?
4. How to determine the daily cargo flow and warehouse capacity?

Literature and resources

1. Zhuravlev N.P., Malikov O.B. Transport and cargo complexes: Textbook. allowance. - M.: Route, 2016.-- 232 p.
2. Boyko N.I., Cherednichenko S.P. Transport and cargo systems and warehouses: textbook / N.I. Boyko, S.P. Cherednichenko. - Rostov n / a.: Phoenix, 2007.-- 400 p.
3. Transport and cargo systems. Textbook / A.S. Balalaev, I.A. Baburova, A. Yu. Kostenko. - Khabarovsk: Publishing house of FVGUPS, 2015.-- 101 p.

4. 4. Complex mechanization and automation of loading and unloading operations: Textbook / Ed. Timoshina A.A. and Machulsky I.I.-M .: Route, 2013.- 400 p.

Internet resources:

1. Abdikerimov, G.S. Logistic management of cargo transportation and terminal and warehouse activities [Text]: A textbook for specialists / G.S. Abdikerimov, S.Yu. Eliseev, V.M. Nikolashin, A.S. Sinitsyna, O.B. Malikov // M: FGBOU "Educational-methodical / center for education in railway transport". - 2013 .-- 428 p. <https://e.lanbook.com/reader/book/59016/#1>
2. Balalaev A.S., Leontiev R.G. Transport and logistics interaction in multimodal transportation: monograph. - M .: FGBOU "Educational-methodical center for education in railway transport", 2012. - 268 p. - <http://e.lanbook.com/view/book/58896/page58/>
3. Design of loading and unloading devices and warehouses: Method. instructions / compiled by V.A. Bolotin, E.K. Korovyakovsky, N.G. Yankovskaya.- SPb.: FSBEI HPE PGUPS, 2015.- 38 p.

Available online: Additional educational material and Internet sources used to complete the assignments of lectures, seminars, CDS, will be available on your page in the Univer.kaznu system.