

Improvement of Technology of Construction and Repair of Soft Packaging of Civil Buildings

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Annotation: This article is about the development and improvement of mechanized technology for the design, construction and repair of soft surfaces of buildings and structures from bitumen-polymer packaging in hot climates.

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Building structures - the construction of any building and artificial structure, residential buildings, public, industrial and agricultural buildings. is the basis of bridges, large-scale buildings, pipes and structures. The bulk of the cost of constructing a building or structure comes from construction.

The large-scale capital construction that is currently underway has led to a very rapid acceleration of the development of the efficient use of building structures - the types of structures and raw materials made from them are constantly improving. Therefore, the methods of calculation, design and restoration of the link are also being improved. One way to increase the efficiency of construction is to increase its readiness as much as possible by compacting its structural schemes and typing the structure, and the other is to ensure that the buildings are competitive, high quality, comfortable and functionally convenient. Due to this, along with the use of mechanized and automated technological processes, a wide range of opportunities for work on construction sites has been opened.

Has a clear definition and understanding of the appearance, spatial characteristics, functions and requirements of civil and industrial buildings and structures. The following are definitions and definitions to illustrate this point in a simple and understandable way.

A Building is a terrestrial structure designed and adapted to a person's activities, with internal space.

Buildings are all devices built by people to meet the material and spiritual needs of society.

Engineering structures - non-building structures used in practical activities: dams, bridges, television towers, tunnels, subways, large containers for storing various products, etc.

Improving the organization and quality of training of highly qualified personnel in the construction industry is now the content of education. Because the knowledge acquired in an educational institution determines the future potential of the specialist and his place in society. The introduction of modern technologies in the production of our country and the design of buildings and structures that meet their requirements are required. To do this, builders need to have a sufficient level of knowledge.

Reinforcement and reconstruction of foundation structures in the underground part of buildings and structures and their engineering communications, whether inside or outside, require a lot of labor and effort. The complexity of the repair of buildings and structures is that the solution to the existing problem depends on the state of the structure and construction conditions to be strengthened. Therefore, the design work is based on the experience of the builder in specific cases.

Reconstruction of the underground part of buildings and structures is carried out in very complex and difficult conditions, which leads to additional labor and financial costs, including the transportation of materials and structures, etc. additional costs associated with strengthening occupational safety are considered. The solution of the selected technological organizational work should help to carry out the work as quickly and accurately as possible, depending on the conditions of the enterprise performing the work.

Strengthening and reconstruction of the foundation should be carried out in strict accordance with the technological map and the design of the development. the design of the work is made on the basis of information about the given building and its foundation. The main purpose of the inspection is to determine the exact condition of the structure, the scope of work and the

conditions of performance. When renovating the basement of the building and strengthening the foundation, the work to be done by the customer must be clearly defined. The following materials are used in the development of the project for the reconstruction of the underground part of the building or structure: repair project, working drawings, construction organization project, inspection materials, technical passport of the building, the order of work from the roof of the enterprise, These include information on safety, energy and vehicle sources.

The strengthening of the foundations will be based on the preparatory project, which will take into account the safety of all work and processes. If the duration of the work does not correspond to the situation of the contractor, the organization and technology of the work will be redefined and developed one by one. the development project envisages the reduction of mandatory breaks and a high use of technological breaks. Particular attention is paid to occupational safety, which includes additional protective measures, temporary lighting, ventilation, etc.

The design of the work will develop the most convenient and precise conditions, clearly indicate the way of transportation of materials and structures, and strictly determine the movement of machinery and equipment. Particular attention will be paid to the accuracy of the construction work on the project. All work in the shop is done in consultation with the shop or factory manager to ensure that the work is on schedule. We can divide the whole complex into two main stages in the strengthening and reconstruction of the foundations of buildings:

The first stage is the preparation of the interior of the building to ensure its safety and durability. At this stage, the foundations are relieved of the load and this load is applied to the temporary support structures;

The second stage includes the filling and replacement of the renovated building with new structural elements, as well as all construction and installation works to strengthen the building. These works include relocating floors, opening trenches, relocating and strengthening old structures or replacing them with new ones, reinforcement and concrete works.

Reinforcement and repair work on the foundation will result in increased workload and increased execution time due to the demolition and replacement of old structures. The choice of method of demolition and replacement of old structures depends on the material, size and dimensions of the structure, the structural condition of the building, local conditions, the number of mechanisms and other factors. Monolithic concrete foundations can be demolished using concrete crushing equipment. It is carried out by means of disintegration or dismantling to break the foundations of large solid monolithic concrete.

During the service life of roofing structures are exposed to adverse environmental factors (heat, cold, snow, rain, etc.) and their properties change over time, their ability to protect against water, their durability decreases. Sudden changes in the external environment and temperature can lead to chemical changes in roofing materials, wear of the roofing base and deformation of roof structures. Long-term (15-20 years) resistance to temperature changes and deformations is one of the main criteria for determining the service life of the roof.

Over time, the roofing compositions polymerize under the influence of heat, oxygen and ultraviolet rays of the sun, lose their elasticity, m averaging and their waterproofing properties decrease. Under high temperatures (80-90 ° C and above in summer) the aging process accelerates, because the oxidation reaction of bitumen or bitumen-polymer binder with oxygen accelerates, and at low temperatures the aging process slows down. The main requirements for

roofing materials are high flexibility, elasticity, heat resistance and durability. A roofing structure that retains these properties for a long time can last a long time. In order to obtain high-grade bitumen from low-grade bitumen used in roofing, it is mixed with air (oxygen) in a special oxidizing device at high temperature (250-280 ° C) and high-grade bitumen is obtained for several hours. This is called oxidation. This condition persists, albeit passively, during the service life of the roofing material, and for several years this process develops under the influence of hot air and air, and the melting temperature of the roofing composition increases and the average temperature decreases. This leads to large and small cracks in the roof structure in the cold, and rain and snow water begin to flow from layer to layer, which leads to partial or complete repair.

The question arises as to whether the requirements for soft roofing as an element of the building depend on the type of material used. Only by summarizing such objective requirements, taking into account the physical and mechanical properties of the materials used, it is possible to qualitatively move to the design of the packaging.

Roofing is one of the most important elements of a building, and due to its reliable service, the structure lasts a long time. Therefore, it is important to study the design of roofing and improve the technology of their construction and repair. To achieve this, the following key issues need to be addressed:

1. Technological study of the construction of ventilated flat soft roofing;
2. Analysis of physical, mechanical and technological properties of mastic layered roofing materials;
3. To study the device of gluing mastic-layered roofing materials to the roof surface and to determine the reasonable technical parameters.
4. Generalize the technology of construction of ventilated soft roofing mastic layered roofing materials and develop reasonable parameters.

The main reasons for the short service life of non-ventilated flat soft roofing are the increase in humidity in the heating layer over time. As a result of moisture, bubbles, cracks and fissures appear in the waterproof layer (roofing) within 1-2 years of use. This process is especially intense during the hot summer months when exposed to sunlight and radiation. In this case, moisture (steam) is rapidly released from the dampened heating material, as a result of which the sealing part begins to move from the base. It is important to ensure the normal temperature and humidity conditions of the roof and the durability of the roofing.

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