

## Increase Energy Efficiency of External Barrier Structures

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**Abstract:** This article provides information on the current demand for energy efficient buildings. The work being done on the outer walls to reduce heat consumption was discussed. Information on the types of exterior wall panels is provided.

**Key words:** energy aggregate, outer wall, mineral wool, mineral plate, heat resistance.

In our republic, new developments and innovations are being introduced and all spheres are developing day by day. 49% or 17 million of all energy consumed in a year in Uzbekistan. the ton of oil equivalent falls on the premises. The population of Uzbekistan is 14 million. from 34 million. on September 1, 2021, the population of Uzbekistan reached 34995710. Thus, the growth of the population requires an increase in construction work, too, and this leads to a sharp increase in the demand for energy and, in this case, a shortage of energy, if it continues. Given these indicators, demand and need for energy efficient buildings are also increasing in our country. The biggest issue in the construction of energy efficient residential buildings is to achieve a minimum energy consumption without disrupting the functional processes that take place in the building.

It is known to all of us that a large part of the buildings that are currently in use are buildings that are built with old norms, and they do not meet the demand for energy splendor. Currently, builders should also solve the problems of increasing the energy efficiency of existing buildings, along with the design of new energy-intensive buildings. As we know, heating of external walls is the most expensive and labor-intensive process. To the famous and widely used methods of heating the external walls, it is necessary to use a variety of these options for heating the external walls directly using a thickened mineral board and plates, using local heating devices, which can be used in a variety of ways.mumkin.

A large amount of requirements are imposed on external blocking structures, high level of thermal protection during the cold period of the year, high level of thermal stability during the warm period of the year, high degree of air tightness, low moisture capacity, etc. The main requirement for climatic conditions in Uzbekistan is the preservation of heat in the winter season, or protection from heat in the summer season.

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Below we will consider one, two, three-layer panels of external walls:

Single-layer wall panels.

As a single-layer panels material

- A) light concretes based on porous fillers based on keramzite, kermite, agloperite and others.
- B) average density 700-900kg/M3 concrete with hollow autonomous alloy pits.

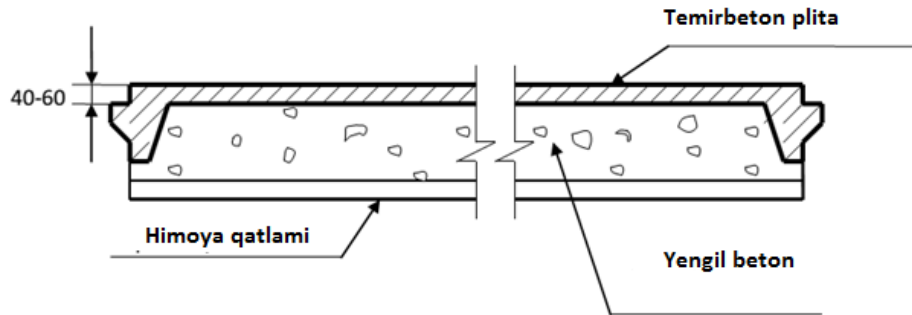
Wall panels made of foam concrete are effective. They beginnshich quickly get rid of moisture. As a result, the thermal protection ability of the barrier construction increases, and the appearance of condensate on its surface is reduced extimol. However, the rapid date of moisture when the initial humidity is high is considered to be a significant drawback.

Single-layer structures give moisture not only out, but also into the room.thanks to this, the absolute humidity in the room increases.

Often in rooms located in the corners, where there are no heating devices, condensation is formed.

Two-layer wall panels.

Two-layer wall panels consist of a load-bearing reinforced layer of dense or heavy concrete and a heat-protectivealaydigan lightweight or layered concrete heating layer.



1-picture. 2 layer wall panels construction. 2 floor wall panels are made of the following materials.

- a) heavy and silicate concrete of class V12,5–V22,5 for load-bearing layers, lightweight concrete with porous filler with density not lower than V25, with density not more than 1800kg/M3.
- b) for thermal protection layer– a layer of concrete with an average density of not more than 500kg/M3, light concrete with an average density of not more than 600kg/M3.

Three-layer wall panels.

Three-layer panels 2 external reinforced concrete.it consists of layers and a heater between them. Panel construction.

As a heater, the following materials are used in such panels.

- a) semi-bikr material cotton plita with bitumen binder with an average density of not more than 250kg/M3.
- b) bitumen binder bikr mineral cotton plita with an average density of not more than 300kg/M3.
- c) plates made of laminated autoclave and non-autoclave concrete (foam concrete,ceramic concrete) with an average density of 400kg/m3.
- d) plates consisting of gas filled bases.

At a time when demand for energy is increasing day by day, we will continue to be one of the pressing issues in the design of energy-efficient buildings using energy-efficient techniques before building engineers.

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