

EXTERNAL AND INTERIOR DECORATION OF BUILDINGS AND STRUCTURES

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The facade is not only the face of the building; it is the image and reputation of its owner. In order to make a proper impression, the facade must have a beautiful and well-groomed look. Location of the house, its purpose, the number floors surrounding the area; all this must be taken into account of facade works. Of course, the design of the facade must meet the functions for which each specific building is intended, because no one will, for example, decorate an industrial building with columns or stucco. Each building should have its own individual facade, especially now when the era of typical homes is a thing of the past. Correctly chosen façade cladding affects the durability of the house, its ability to preserve heat, the level of humidity in the premises. The facade should be strong, fire-resistant, steady, heat-conducting, and to have necessary sound insulation. Facade cladding should cope well with adverse external action. This pollution has the form of dust, soot, soot, precipitation, sunlight, and salty wind blowing from the sea. All these factors have a destructive effect on the materials which the house is built of. So, the façade cladding must be particularly resistant to such action.

Waterproofing is another important task of facade cladding. Facing should protect the facade from external moisture, and if we are talking about the lining of the plinth, we should also bear in mind such effects as capillary rise of ground and melt water. It is obvious that the cladding must be resistant to moisture and prevent its penetration. But at the same time, the facade cladding must be characterized by sufficient vapor permeability; otherwise its life will be short.

Condensate, which is inevitably formed on the inside of the finishing layer without opportunities for evaporation, will destroy not only the layer of facade cladding, but also the wall itself. This is especially true for regions with frosty winters. Condensate in such a climate is formed intensively, and the smallest droplets of water, penetrating into the structure of the building material and freezing there, contribute to the formation of microcracks, which, in turn, sooner or later leads to its destruction. Finally, thermal insulation is another serious task to be solved which is designed to promote the facade cladding. This setting is closely related with the previous one. With the wrong ratio of water absorption and vapor permeability, as well as excess moisture accumulating in the walls, it will not only lead to the destruction of the facade cladding, but also to the heat loss during the winter period.

Thermal insulation of facades is achieved through comprehensive measures. Here it is necessary to consider and heat-conducting properties of finishing materials, and additional thermal insulation, used under the cladding, if any is present, and the material the house is built of. There are many ways to line the facades, which are designed not only protect the walls of the building from weather disasters, but also ensure the attractive appearance of it. Materials play a key role in any technology for decorating facades. Today, three main trends are used in external decorating of buildings, namely various front panels, plasters, tile or stone.

It is these options are used for finishing the facade of the building; they will not only enable to decorate it, but also become a reliable protection against natural aggressors.

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MATHEMATICAL MODELING OF THERMAL EFFICIENCY OF THE BUILDING ENVELOPE ISOLATION WITH ACCOUNT FOR THE ACTUAL CONDITION

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In contrast to studying the thermal state of the buildings that undergo general thermal modernization, studying thermal processes that occur due to partial insulation of the enclosing structures is not extensive. This is proved by the results of the search for scientific developments on this topic in scientific databases. In a number of the analyzed articles the following terms can be found: “individual insulation”, “patch insulation”, “partial insulation”, “fragmentary insulation”, “non-systemic insulation” and “uncontrolled insulation”.

Currently, the official regulations of Ukraine do not reflect the problem that has arisen in housing and communal services, namely, the individual insulation of the external walls of the apartment buildings within individual apartments. However, national scientists have repeatedly stressed the inadmissibility of such actions.