

**METHODOLOGY OF IDENTIFICATION OF THE OVERALL WATER VAPOUR PERMEABILITY  
RESISTANCE OF EXTERNAL FINISHING LAYERS OF COMPOSITE THERMAL INSULATION  
FAÇADE SYSTEMS THAT HAVE EXTERNAL PLASTER LAYERS**

The method of identification of the water vapour permeability resistance of finishing layers of composite thermal insulation facade systems that have thin external plaster layers was developed by the authors. The above systems comprise one layer of the heat insulation material that has a 5 mm finishing coating. This system is fastened to the building wall. The method is based on the results of an experiment held to identify the resistance of all systems to the water vapour permeability irrespective of the availability of finishing layers.

The proposed method is more accurate than any of the previously known methods that contemplate the experimental determination of coefficients of water vapour permeability of materials of finishing layers and subsequent calculation of the overall resistance to the water vapour. The State Standard «Method of Determination of Resistance to the Water Vapour Permeability» that implements the «wet cup» technology has been applied. The method has been employed to identify the resistance of finishing layers of BAUMIT insulation system to the water vapour permeability. BAUMIT has a thermal insulation layer made of mineral cotton. It has been identified that the overall resistance of the finishing layer to the water vapour permeability, as determined in accordance with the methodology developed by the authors, is twice as less efficient than the overall resistance identified in accordance with prior methodologies. This difference in the characteristics of finishing layers essentially raises the accuracy of projections of the moisture behaviour of all composite facade insulation systems that have thin external plaster layers.

**Key words:** thermal insulation systems, finishing layers, resistance to water vapour permeability, coefficient of water vapour permeability.

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