

Wood-polymer composite with secondary thermoplastics compositions according to the principle of synergic modification

Kopilov S. O., Cherkashina G. M., Derius D. V.

National Technical University “Kharkiv Polytechnic Institute”, Ukraine, Kharkiv
annikcherkashina@gmail.com

The current trend for recycling important waste products is the preparation of products from wood-polymer composite (WPC). However, the increased development of these materials and the increase in the assortment of cheese, which is produced during the development of WPC, constantly reveals deficiencies during drying. The most critical problem is water depletion, which leads to a change in the geometric dimensions of the germs, the growth of fungal colonies and the collapse of material from the middle. The penetration of molecules into the duodenum occurs through the pores of diffusion processes. For other equal minds, water resistance depends on the thickness of the WPC. WPC with advanced elasticity, low wear support and low heat resistance has a more fluffy structure, and is therefore characterized by great water absorption. Great excess stress, which can lead to the formation of microcracks, also increases water loss. In order to study these indicators, it is necessary to understand the mechanism of water infusion into the duodenum. The diffusion of water through the DPC was judged by the diffusion coefficient. The diffusion coefficient was adjusted according to the sorption time. The use of sorption methods to evaluate the integral diffusion coefficient, which is the value at the final stage of the sorption process, allows us to evaluate the directness of sorption processes. The degree of penetration of WPC may be related not only to diffusion, but also to the sorption of substances that diffuse. In addition, the relaxation powers of the successful KDP are poured into the insults. The fluidity of relaxation processes during swelling of polymers and conformational transitions at the state of internal thermodynamic equilibrium is directly affected by the diffusion coefficient. The methods used to eliminate and prevent this problem are completely unknown.

A method of synergistic modification during the production of a wood-polymer composite, and itself, a one-time modification of the wood surface and polymer matrix, has been proposed. An optimal warehouse for thermoplastic wood-polymer composite based on recycled wood has been developed: polyethylene, thermoplastic polyurethane, wood resin, additives and modifiers. To align with the protonated products, industrial products of the WPC were selected. A detailed description of the viruses is given in Table 1.

Table 1 - Level table of various indicators of wood-polymer composites based on secondary thermoplastics

Showcase	Received sample	Industrial sample
Water-claying, %	2,2	10,8
Diffusion coefficient, $D \cdot 10^{-10} \text{ m}^2/\text{s}$	4,3	6,4
Wear resistance	0,052	0,309
Change in size, %	Not detected	Type 3 to 10
Mushroom resistance, KUO/cm ³	10 ⁵	10 ⁷ -10 ⁹

Data table 1 It is clear that the division of a warehouse of wood-polymer composite based on recycled wood with a modified polymer matrix and modified wood on the surface has more power in the lower industry. Fungus resistance is higher than 30%, water absorption is 70% less, wear resistance is 6 times. This means that the industrial products are made from virgin cheese.