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OBTAINING ACTIVE MINERAL ADDITIVES FROM INDUSTRIAL WASTE

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Анотація. Встановлено, що найбільшу кількість промислових відходів утворюють підприємства гірничодобувних, металургійних та теплоенергетичних галузей. Техногенні промислові відходи порушують екологічну рівновагу в природному середовищі, є джерелом забруднення навколишнього середовища. Науковцями ВНТУ запропоновано використовувати активовану золу-винос як активну мінеральну добавку. Таку добавку можна отримати в результаті хімічної активації золи-винос розчином червоного шламу.

A promising direction for increasing the production of building products is the use of industrial waste in the technology of their production. Processing of industrial and domestic waste is beneficial both from an economic and environmental point of view, because at the same time, significant land is freed from the accumulated dumps of hazardous chemical waste and the cost of their maintenance is reduced [1-2].

Due to the difficult economic situation in the country, there is a need to use industrial waste in the production of building materials. An analysis of scientific research shows the economic feasibility of using TPP waste in the production of cement and other building materials [3].

In [4-5], the authors found that the activity of ash increases with an increase in the content of SiO_2, Al_2O_3, Fe_2O_3. Fly ash is covered with an inert vitreous shell. The destruction of such a shell opens up access to reactive components that can react with $Ca(OH)_2$ [6-7].

Chemical activation of fly ash is possible as a result of the addition of bauxite sludge. Bauxite red mud is formed as a by-product of aluminum production. The authors in [8-9] proved that the addition of bauxite sludge to the composition of the ash-cement mixture ensures the intensification of the processes of neoformations of the mineral-phase composition of the complex binder. The addition of a pre-activated ash and slurry mixture to the composition of the mortar in the amount of 20-30% by weight of Portland cement provides an increase in the mechanical strength of the samples in compression by 12-16%.

Conclusions. Activated fly ash should be considered as an active mineral additive that can improve the physical and mechanical properties of building products.

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