

The invention relates to the production of building materials, in particular to the production of activated building mixes based mainly on mineral binders and inert fillers.

The process for preparation of activated building mixes based on binders and their compositions, inert fillers and water includes mixing the components with simultaneous supply of air and corrective, including air-entraining, plasticizing, hydrophobic admixtures and activation of the aqueous mixture of the binder by hydrodynamic cavitation, at the same time mixing is carried out in two stages: in the first stage is prepared the activated aqueous mixture of the binder, the activation of the binder and water, entering the mixing zone, is carried out by pre-treatment with torsion (non-ionizing) radiations, and the activation of the water-binding mixture – by the action of hydrodynamic cavitation controlled by changing the size of restrictions in the flow of the moving mixture, the degree of aggressiveness of which is determined by the specific properties of the binder, at the same time additionally mixing of the components of the aqueous mixture of the binder is carried out continuously in horizontal plane at a rate of 13.5...48.5 m/s so that the mixed components are dropped from the vertical shaft with blades in the center of the mixing zone to the periphery, and thence are forcibly directed to the center of the mixing zone, rotated opposite to the direction of rotation of the vertical shaft, and in the second stage is mixed the activated aqueous binder mixture with the prepared aggregates, activated by preliminary finish grinding of 30...100% of them up to the specific surface of 2500...3500 cm²/g and treatment with torsion radiations, the supply of aggregates to the mixing device being performed after grinding and irradiation immediately or after curing in a thermostatic capacity of at most 12 hours.

The building mix components are supplied for mixing preheated to a temperature that ensures the temperature of the finished building mix of 40...90°C. In the composition of the supplied air are additionally introduced gases activating the building mixes in an amount of 1.0...15.0% of its volume. For preparation of building mixes is used water, including sea water, with a content of mineral salts of 5000...30.000 mg/dm³, including sulfates 2700...5000 mg/dm³ (calculated for SO₃), at the same time in the mix is additionally added milled quicklime with a specific surface of 3500...5000 cm²/g in an amount providing the transformation of mineral salts contained in the water and dry components of the mix into insoluble compounds to the content of mineral salts of 5000 mg/dm³, as well as crushed pozzolanic additive in an amount necessary to ensure the concentration of CaO in the aqueous suspension of the mineral binder and pozzolanic additive up to 1.1 g/dm³ in 5 days and 0.85 g/dm³ in 7 days.

The process permits to produce on one production line building mixes with preset indexes of density, to significantly increase the use of binder properties and, as a result, to increase the strength of products, making it possible to reduce the consumption of the binder.

Claims: 4

Fig.: 2