

**OPTIMIZATION OF CEMENT COMPOSITES WITH THE USE OF FILLERS
FROM THE CHECHEN REPUBLIC FIELDS**

The fillers together with binders take part in microstructure formation of matrix basis and contact zones of a composite. The advantage of cement matrix structure with a filler is that inner defects are localized in it — microcracks, macropores and capillary pores, as well as that their quantity, their sizes and stress concentration decrease. Structure formation of filled cement composites is based on the processes taking place in the contact of liquid and stiff phases, which means, it depends on the quantitative relation of the cement, fillers and water, and also dispersivity and physical and chemical activity of the fillers.

In the article the authors offer research results of the processes of hydration and physical-mechanical properties of cement composites with fillers from the fields of the Chechen Republic. Research results of heat cement systems are presented, modified by fine fillers. Optimal composition of cement composites filled with powders of quartz, sandstone, river and a mountain limestone of different particle size composition, characterized by a high strength, are obtained.

Key words: cement composite, strength, heat evolution, filler, particle size composition.

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