

عنوان مقاله:

Investigation of the Properties of Masonry Mortar Containing Recycled Aggregate and Zeolite with a Focus on Sustainable Development and Green Mortar

محل انتشار:

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خلاصه مقاله:

In this article, the characteristics of masonry mortar made with recycled sand and zeolite are investigated in the context of sustainable development. For this purpose, 8 masonry mortar mix designs were considered, in which, in addition to the base design, recycled sand replaced natural sand by 50% and 100%, and zeolite replaced cement by 10%, 15%, and 25%. Additionally, the water-to-cement weight ratio was set at 0.55, and the cement-to-sand weight ratio was set at 1:3. Experiments were designed to measure various physical and mechanical properties of the masonry mortar made with recycled sand and zeolite. Tests for water absorption and density were conducted to evaluate physical properties, as well as tests for compressive strength and flexural strength to assess mechanical properties, and a flow table test to evaluate workability and efficiency. The tests performed on the masonry mortars made with recycled sand and zeolite have yielded acceptable results that meet the requirements of the national standard for masonry mortar. They demonstrate that replacing 50% of natural sand with recycled sand and 15% of cement with zeolite can be a good strategy for reducing the use of natural materials, promoting sustainable development, and achieving green mortar

کلمات کلیدی:

Recycled Sand, Zeolite, Sustainable Development, Green Mortar, Masonry Mortar

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