

## عنوان مقاله:

The impacts of the temperature on the durability of the mortars containing Feldspar and GGBS

## محل انتشار:

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## خلاصه مقاله:

This experimental study investigates the effects of the temperature on the durability of the mortars containing Feldspar and Ground Granulated Blast-furnace Slag (GGBS). Prior research has studied the use of Feldspar as a cement substitute. In this work, however, GGBS has been added to Feldspar to evaluate the durability of specimens. Cement was partially replaced with Feldspar and GGBS at 10%, 20%, and 30% replacement rates. In general, two sets of 20 mix designs with w/b ratios of 0.40 and 0.35 were investigated. For evaluation of properties of the mortars, compressive strengths after 7, 28, and 90 days of curing and residual compressive strength after exposure at 100°C, 200°C, 400°C, and 600°C were tested. In all mixes containing Feldspar and GGBS with varying w/b ratios, compressive strength was slightly reduced by Feldspar and GGBS replacement, with the exception of ternary mixes, which exhibited divergent trends; mixes containing GGBS exhibited higher compressive strength than mixes containing Feldspar. Substituting additives for cement remarkably increased the residual compressive strength after 200°C in most specimens compared to the control mix designs. In addition, mixtures with a w/b ratio of 0.35 had better results than those with a w/b ratio of 0.40.

## کلمات کلیدی:

Feldspar, GGBS, Durability, Compressive strength, Residual compressive strength

## لینک ثابت مقاله در پایگاه سیویلیکا:

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