

## عنوان مقاله:

Investigating the Effect of Iron Ore Powder on Fresh and Hardened Properties of Self-Compacting Concrete

## محل انتشار:

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## خلاصه مقاله:

One of the issues that strongly affect the properties of self-compacting concrete is the role of fillers. The effect of the type and performance of fillers on the properties of concrete in a fresh and hardened state is important. In this research, the effect of using iron ore powder as filler on the rheological and mechanical properties of self-compacting concrete has been investigated. To evaluate the rheological properties of self-compacting concrete, slump flow and  $T_{50}$  tests were performed on samples with different percentages of iron ore powder (0 to 8%). The mechanical properties of the samples were also measured by performing concrete compressive strength tests at the ages of 3, 7, 28, and 90 days. The results of the tests performed on the samples show that increasing the amount of iron ore powder, increases the unit weight of the self-compacting concrete and decreases the slump flow by up to 30%. In addition, the results of the compressive strength test show that, in general, with the increase in the amount of iron ore powder, the compressive strength of the samples has decreased between 2-23%. Based on the results of this research, an optimal amount for iron ore powder replacement cannot be reported.

## کلمات کلیدی:

Iron ore powder, Heavy concrete, Concrete fresh properties, Concrete hardened properties

## لینک ثابت مقاله در پایگاه سیویلیکا:

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