

Study on Micronized Sands as Cement Replacement



A promising solution to produce environment friendly product.

Subject

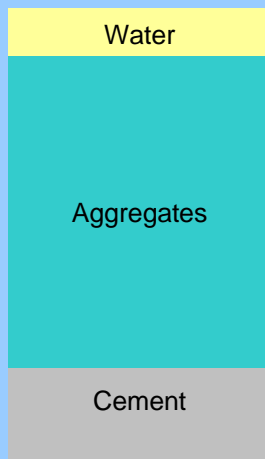
In cementitious material a substantial fraction of the cement particles remains unhydrated, acting as rather expensive fillers. A question is whether it is possible to reduce the use of cement by adding other fillers. Micronized sand might be a promising alternative which can be selected as fillers to replace part of cement clinker. This substitution can not only reduce the cost but also cut down the emission of CO₂. If that is workable and the performance of this material is without significant loss, this material can be used in cement industry to produce environment friendly products.



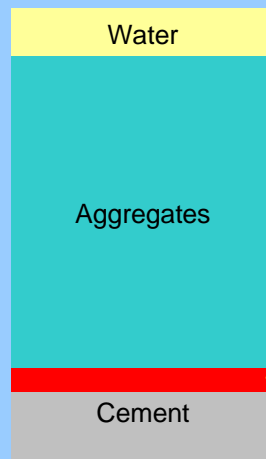
Micronized sand:
made made by selected quartz sand, which is purified both mechanically and chemically after extraction.

- ★ M6, M300, M600.....
- ★ 10%, 20%, 30% replacement
- ★ Performance, Money, Service life

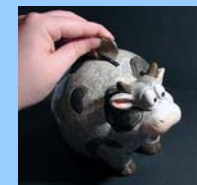
Former System



After Modified



Micronized sands



Goals

Micronized sand could be a more reasonable option to replace cement clinker in cementitious material from the energy consumption, emission reduction and economic point of view.

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Goals

Micronized sand could be a more reasonable option to replace cement clinker in cementitious material from the energy consumption, emission reduction and economic point of view.

Research Question

When applied micronized sands to replace cement clinker, the microstructure of material is changed, which will influence the long term properties. In that case, the service life of material is different.

Strategy

Use different type and different mixed design to find the effect of fillers both in physical and chemical aspects.

Expected Results

To find the difference of long term properties between cement paste with and without micronized sand in order to estimate the service time of material after modification.

Research Period

October 2007 – October 2011

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