

## **Filler effect of fine particle sand on the compressive strength of mortar**

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**Abstract:** The river sand, which is a non-pozzolanic material, was ground into 3 different particle sizes. Portland cement type I was replaced by the ground river sands at 10wt%..40wt% of binder to cast mortar. Compressive strengths of mortar were investigated and the filler effect or different tine particles of sand on the compressive strength of mortar was evaluated. The results show that the compressive strength of mortar contributed from the filler effect of smaller particles is higher than that of the coarser ones. The difference in compressive strength of mortar tends to be greater as the difference in ground river sand fineness increases. The results also suggest that ASTM C618 specification is not practically suitable for specifying pozzolan in concrete since the strength activity index of mortar containing ground river sand (high crystalline phase) with 33.8wt% of particles retained on a 45- $\mu$  m sieve can pass the strength requirement.

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