

Role of recycling fine materials as filler for improving performance of concrete - a review

There are limitations that are associated with recycled aggregate concrete (RAC), with regards to strength, durability and micro scale features. These have led to the use of artificial admixtures for modifying concrete properties. This review dwells on the use of fillers to improve the mechanical and microstructural properties of RAC. Fillers are sourced naturally or processed from industrial and construction sector wastes, and they are added into concrete to modify or enhance its workability, strength and micro scale properties. Despite the increasing use of aggregate sourced from construction and demolition activities for the production of fresh concrete, studies have shown that the strength, among other properties of the new concrete are inferior to that of conventional concrete. To take care the defects resulting from recycled aggregate in fresh and hardened concrete, various filler materials are used in the concrete. The performance of various fillers previously used in RAC is highlighted and recommendations were made for further studies and applications.

KEYWORDS: Recycled aggregate concrete fillers workability strength microstructure