

An overview of Treatment Methods for Improving the Quality of Recycled Aggregate

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ABSTRACT

The steady increase in construction waste from urban redevelopment, coupled with the depletion of natural aggregates, has highlighted recycled aggregate (RA) as a critical eco-friendly and economical alternative [1]. However, the application of RA is predominantly limited to low-value purposes such as backfilling, rather than for high-value use as concrete aggregate [2]. This is primarily because residual mortar and impurities attached to the RA can significantly degrade concrete quality by impairing workability and strength while increasing shrinkage and creep [3]. Furthermore, conventional processing methods can introduce micro-cracks within the aggregate, further compromising its performance [3]. Consequently, there is a pressing need for advanced treatment technologies that can effectively remove residual mortar and enhance aggregate quality, thereby enabling the broader use of RA in high-value concrete applications. This paper provides an overview of treatment methods for improving the quality of RA.

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