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Comparative Study of Natural and Crushed Aggregates

Aves, Federico A Jr.
Department of Civil Engineering, Surigao del Norte State University, Surigao City, Philippines
faves@ssct.edu.ph

Abstract: *A crucial aspect of enhancing concrete performance, particularly in terms of compressive strength, involves making sound choices regarding the sources of aggregates. This study aimed to compare the compressive strengths of concrete formulated using fine and coarse aggregates from five distinct locations. A range of physical assessments were conducted to gauge the impact of these aggregates on concrete's compressive strength. These evaluations included tests for specific gravity and absorption, sieve analysis, abrasion resistance, workability, and compressive strength. The findings highlighted that concrete crafted with fine and coarse aggregates from crushed stone sites exhibited the highest average compressive strength of 25 MPa. Following closely were the natural aggregates, yielding an average compressive strength of 24.88 MPa after a 28-day curing period. This slight variance between the two sources is attributed to their close proximity. The monitoring of compressive strengths was carried out over 7, 14, and 28 days. Overall, the research demonstrated the viability of all selected aggregate sources for use in concrete construction projects.*

Keywords: concrete, compressive strength. crushed aggregates, natural aggregates

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