IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 6, June 2022
Impact Factor: 6.252

A Review on Flexural Behaviour of RC Beam with Nano-Silica

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Abstract: *The partial replacement of cement with nanomaterials such as nano-silica(NS) particles in concrete improves its strength and other properties. In this study, the effect of NS as a partial replacement of cement for concrete mixes and concrete beams was examined. The studied response characteristics of reinforced concrete beams included compressive strength, failure mechanisms, load-carrying capacity, and load-deflection behavior. The results showed that compressive strength increased with an increase in NS content up to 2.0% replacement of cement weight. The rate of increase in compressive strength was no longer significant beyond 2.0% replacement, indeed there was a slight decrease in compressive strength for NS content of 3.0%. The effect of increased NS content on the flexural behavior of beams was also studied. Increased NS content led to increases in the first-cracking and ultimate loads and reductions in the deflection at cracking and ultimate load levels.*

Keywords: Nano-Silica, Steel Fibers, Mechanical Properties and Durability.

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Impact Factor: 6.252

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