

## Effect of Rubber Treatment on Compressive Strength and Modulus of Elasticity of Self-Compacting Rubberized Concrete

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**Abstract :** This paper investigates the effects of different treatment methods of rubber aggregates for self-compacting concrete (SCC) on compressive strength and modulus of elasticity. SCC mixtures with 10% replacement of fine aggregate with crumb rubber by total aggregate volume and with different aggregate treatment methods were investigated. The rubber aggregate was treated in three different methods: dry process, water-soaking, and NaOH treatment plus water soaking. Properties of SCC in a fresh and hardened state were tested and evaluated. Scanning electron microscope (SEM) analysis of three different SCC patches were made and discussed. It was observed that applying the proposed NaOH plus water soaking method resulted in the improvement of fresh and hardened concrete properties. It resulted in a more uniform distribution of rubber particles in the cement matrix, a better bond between rubber particles and the cement matrix, and higher compressive strength of SCC rubberized concrete.

**Keywords :** compressive strength, modulus of elasticity, NaOH treatment, rubber aggregate, self-compacting rubberized concrete, scanning electron microscope analysis

**Conference Title :** ICSRD 2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020