**Evaluating impact resistance of rubberized cement-stabilized aggregates**

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**Abstract.** Incorporating rubber aggregates ground from end-of-life tyres in concrete mixtures as a replacement for coarse/fine aggregates could help to improve the resistance of rubberized concrete to impact loading. However, the literature found none of the investigations on the impact resistance of rubberized cement-stabilized aggregates. In this paper, cement-treated materials (maxim size of 25 mm and 4% cement content), in which rubber aggregate 1-3mm was used to replace mixed aggregate from 0.455-9.5mm at different contents of 0, 5, 10, and 20%, were subjected to impact loadings. Experimental results showed a better impact resistance of rubberized cement-stabilized aggregates through the number of blows at composite failure and change in UPV of the sample before the first visible crack. A damage variable was also suggested to evaluate the resistance of the mixtures to impact loading. Higher rubber aggregate content resulted in lower damage with the narrowest cracks and wide cracking distribution than significant opening damage on the reference cement-treated aggregates.

**Keywords:** Rubberized cement-stabilized aggregates, Impact resistance, Damage variable, ultrasonic pulse velocity, cracking.