Experimental investigation on compression toughness of rubberized steel fibre concrete

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In this study, the compression toughness of steel fibre concrete (SFC) with the inclusion of crumb rubber by partial replacement of fine aggregate was investigated. Crumb rubber was incorporated at different percentages of 5%, 10%, and 15% by volume. The compression properties (compression strength, modulus of elasticity and stress–strain diagrams) showed a possible interaction between steel fibre and crumb rubber to enhance such properties of concrete. Results obtained showed improvement in the compression toughness by increase of crumb rubber content up to 15% and change into the behaviour of normal concrete to ductile instead of brittle. The toughness index and the specific compression toughness of concrete specimens indicated crumb rubber could be satisfactorily utilized with steel fibre to present a good performance under compressive loading and to keep the environment clean and healthy by recycling of waste tire.