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The Influence of Incorporating in the Concrete of Recycled Waste from Shredding Used Tires and Crushed Glass on Their Characteristics and Behavior

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Abstract : There is no doubt that the batteries increasingly used tires create environmental concerns. Algeria generates large amounts of by industrial and household waste, such as used tires and colored glass bottles and dishes, whose valuation in cementitious materials could be an interesting ecological and economical alternative for broadening eliminating cumbersome landfills. This work is a contribution to the promotion of local materials with the use of waste tires and glass bottle in the development of a new cementitious composite having the acceptable compressive strength and a capacity of improved strains. For this purpose, rubber crumb (GC) from shredding used tires were used as partial replacement of quarry sand with 10%, 20%, 40, 60%. In addition, some mixtures also contain glass powder at15% cement replacement by volume. The compressive strength, tensile strength, deformability, the water permeability and penetration Inions chlorides are studied. As results; an acceptable compressive strength was obtained with the substitution rate of 10% and 20% by volume, the deformability of the composite increases with increased replacement rate. The addition of finely ground glass as a partial replacement of cement concrete increases the resistance to penetration of Inions chloride and reduce the water permeability thereof; then increases their durability.

Keywords : crumb rubber, deformability, compressive strength, finely ground glass, durability, behavior law
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