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## **ECO-FRIENDLY CONCRETE FROM WASTES**

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### **Abstract**

The paper presents the experimental results obtained on cement concrete with different types of waste and the analysis of their effects on density, compressive strength, flexural strength and splitting tensile strength. The tests results were compared with a control mix without aggregate substitution. The fly ash was used as replacement of cement and polystyrene granules, chopped plastic bottle (PET) and wood waste were used as substitution of 0-4 mm aggregate sort in different dosages from 0% to 100%. The density of mixes showed that the lightweight concrete was obtained for higher substitution of 0-4 mm aggregates for all mixes. The values of the mechanical properties for all mixes were lower than the values of control mix. Depending on the type and dosage of the substituted aggregate, the eco-concrete can be structural or non-structural. The mix with PET showed higher values of the mechanical strengths compared to the value of the mixes with polystyrene granules and wood.

*Key words:* concrete, fly ash, mechanical properties, polystyrene, recycled plastic, wood waste

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