**ECO-FRIENDLY CONCRETE CONTAINING PET PLASTIC WASTE AGGREGATE**

**Wasan Ismail Khalil 1, Khalaf Jumaa Khalaf 2**

1 Professor, 2 engineer

Building and Construction Engineering Department, University of Technology / Baghdad

E-mail: wasan1959@yahoo.com, khalaf85gumaa@yahoo.com

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**ABSTRACT: -** The experimental program in this investigation focused on studying the properties of concrete containing different percentages of Plastic Wastes Polyethylene Terephthalate (PET) plastic waste as a volumetric replacement to natural coarse aggregate. Different percentages (10%, 20%, 30%, 40%, and 50%) of PET shredded plastic waste from waste PET bottles as a volumetric replacement to natural coarse aggregate and 10% silica fume as a replacement by weight of cement content were used. The properties of these concrete mixes including, workability, dry density, compressive strength, total flexural energy, impact resistance, thermal conductivity at 28 days age and drying shrinkage at 90 days age were studies. The use of plastic waste aggregate in concrete presents various advantages; one of these advantages is that plastic aggregates result in producing lightweight concrete depending on the percentage of plastic waste used. The dry density of concrete containing higher percentage of PET plastic waste of 40% and 50% as a volumetric replacement to natural coarse aggregate, was 1910 and 1850 kg/m3 respectively. Also thermal insulating properties of concrete containing plastic waste aggregate were improved.

***Keywords:*** *Polyethylene Terephthalate PET, Volumetric Replacement, Plastic Waste, Coarse Aggregate.*