

Abstract

Code of Project : A44/2558
Project name : Developing of Tensile Properties of Concrete Mixed with Plastic Waste
Researcher name : Dr.TeerinKongpun, Miss PiyanutMuangtong, Mr.SuthonRungruang

The objective of this study is bring plastic trashes from industry and household (plastic plate, foam and plastic beads) to mixing with cement for produce mortar by using plastic trashes each type for material mass resolution instead of partly of sand and study mechanical properties such as value of unconfined compressive strength and tensile strength of mixing plastic trashes with mortar. Starting to mix mortar in ratio wt % cement : water : sand are 1 : 0.485 : 2.75 . Mixing plastic trashes each type to test unconfined compressive strength and tensile strength mixing plastic trash with mortar substituted sand from plastic plate , foam and plastic beads in ratio 2.5, 5, 10 at 7,14 and 28 days, respectively.

The results from experiments showed that compressive strength ratio of 2.5 wt% mixing plastic plate at 28 days had highest compressive strength and closed to standard mortar due to plastic plates were grinded to rod shape and also had smooth and rough surface. For tensile test, the 2.5 wt% plastic beads ratio at 28 days was 475.00 KPa which the highest value and closed to standard mortar due to plastic beads made from polyethylene were dominant properties about toughness and tensile strength resistance. Therefore, it made mortar had increased tensile capacity.

Keywords: plastic waste, mortar, polyethylene, polystyrene, foam, plastic bead, plastic plate, compressive strength, tensile strength

E-mail Address : teerin.kon@rmutr.ac.th

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