International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.10 No.8, pp 656-661, 2017

Comparative Study on Polymer Resin Concrete

S.Prema*, S.Sakthivel, C.Sankar, J.Vasantha kumar, S.Vijay

Department of Civil Engineering, Muthayammal Engineering College, Rasipuram, Tamilnadu, India.

Abstract : Polymer concrete was introduced in late 1950's and become well known in 1970's for its use in repair, thin overlays and floors, precast components. Because of it properties like high compressive strength, fast curing, high specific strength, resistance to chemical attack, polymer concrete has found application in very specialized domains. Simultaneously these materials have been used in machine construction also where the vibration damping property of polymer concrete has been exploited. Polymer mortar and concrete are related to new liquid resin such as Polyester, Epoxy as binding material with aggregates. The properties such as setting shrinkage, thermal properties, temperature dependence, lightweight are taken care in respect of light weight porous polymer mortar. This paper investigates the properties of the polymer concrete matrix with different percentages of Epoxy resin binder and light weight particulate fillers.The mixing proportion of particulate filled resin (PFR) was optimized while targeting a specific strength and workability. The content of epoxy resin was varied from 70% to100%, whereas the filler materials ranged from 0% to 30%.The tensile and compression performance of PFR was evaluated using the tensile and compressive strength tests and the most suitable mix proportion of different filler materials are determined based on the experimental results.To study and compare the characteristics of resin concrete containing different filler materials with conventional concrete.

Key words : Epoxy resin, Epoxy hardener, Mineral admixtures, Compressive strength test, Tensile strength test, Acid test.

*****