Clogging Studies: Effect of Sandy Soil Sediment on Clogging of Pervious Concrete

M Chaitanya[1], G. Ramakrishna[2]

[1]Research Scholar, Civil Engineering, Puducherry Technological University, Puducherry
[2]Professor, Civil Engineering, Puducherry Technological University, Puducherry
mycherlac@pec.edu

ABSTRACT

Permeability is the predominant property of a pervious concrete mix. The permeability of pervious concrete reduces during its service life and the reasons attributed are inadequate void content of the mix, poor drainage facility, improper design and clogging due to sediment deposition. Clogging of pervious concrete due to sediment deposition is the major concern for permeability reduction. The pervious concrete pavement will be subjected to different sediment depositions depending on the surrounding soil and also due to the soil deposited by vehicles. Sandy soil is one such sediment which gets deposited on the pervious concrete pavement during its service life. In the present study, four pervious concrete mixes of different composition were subjected to clogging using sandy soil as sediment in the laboratory and the reduction in permeability is observed. In addition the pervious concrete mixes were also subjected to different rates of clogging. It was found that the permeability reduced significantly for slow rate clogging (90%) compared to medium and high rate clogging (75%). The study also revealed that the four pervious concrete mixes designed in the present study were good enough to withstand the clogging effect due to sandy soil. The designed pervious concrete mixes were able to withstand a sediment load of up to 0.64g/cm^2 for slow rate clogging and 1.02g/cm^2 for medium rate clogging.

Keywords: *Pervious concrete, Clogging, Permeability, Sandy soil, Sediment.*