

Effect of degree of saturation, air voids and medium of attack on the durability of asphalt concrete mixes in Jeddah.

Hasnain Javed

Civil Engineering

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Abstract

Most of the cities in the Kingdom of Saudi Arabia suffer from a water damage problem. In this research, the Al-Salama district of Jeddah City is investigated and the effects of degree of saturation, air voids and medium of attack on fatigue life, modules of resilient, split tensile strength and permanent deformation are studied. Three mediums of attack were considered, fresh water, sea water and soap diluted water. Some treatments were carried out on asphalt concrete mix including filler replacement by cement, aggregate coating by cement, of emulsified asphalt treatment and addition of lilamine as an anti-stripping agent were evaluated. Finally some conclusions were drawn and suggestions to overcome this problem were recommended.