

ABSTRACT

The quantum of plastic in solid waste is increasing due to increase in population urbanization, development activities and changes in life style which is leading to widespread littering on the landscape. The disposal of waste plastic has thus become a serious problem globally due to their non-biodegradability. The deteriorating quality of roads is another area of concern as the present roads are not able to withstand the increasing traffic and also are less resistant to adverse weather conditions. Research is being carried out to develop suitable alternatives to the conventional road construction materials.

Current methods adopted to deal with plastic waste disposal worldwide include use of landfills and incineration. Both methods are known to have environmental and safety concerns. Today, the majority of roads are constructed using bitumen, tar or cement. Each of these has their own merits and demerits. Another kind of road has been suggested plastic road. This provides a solution to the problem of effective disposal of plastic waste at the same time increases the strength and durability of the road, addresses the environmental, economic and most importantly safety issue. In this work, the use of autoclaved medical plastic waste in the form of shredded syringes and glucose bottles in road construction is tested.

The main objective of the study was to investigate the performance of the bituminous mix modified with bio-medical plastic waste and to compare it with the normal mix. Medical plastic waste was collected and the properties of Plastic Coated Aggregates (PCA) were determined. The results showed improved properties for PCA when compared to normal aggregates.

Keywords: Plastic Coated Aggregates, bitumen, concrete mix, penetration etc