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Abstract Details

Title: Polythene Recycling Utilized to Improve Bituminous Concrete Mixture Properties

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Abstract: Bituminous Concrete (BC) is a composite material mostly utilized in construction projects like, airports terminals, road pavement, parking lots etc. It consists of asphalt or bitumen (used as a binder) and mineral aggregate which are mixed together & laid down in layers then compacted. Today's life consist the steady increment in high traffic intensity in terms of commercial vehicles, and the significant variation in daily and seasonal temperature which arises due to global warming because of excessive carbon emission, put us in a demanding situation to think of some alternatives for the improvisation of quality assurance and the pavement characteristics by applying some necessary modifications which shall be satisfy both the strength as well as economical aspects. We have to considering the environmental approach, due to excessive use of polythenes in day to day life, the pollution to the environment is enormous. Here we know, the polythenes are not biodegradable, the need of the current hour is to utilize the waste polythene through recycling in some beneficial purposes. This paper presents a research conducted to analysis the behavior of BC mix modified with waste polythene. As per IRC code, it recommended the various percentages of polythene are used for preparation of mixes with a selected aggregate grading. The role of polythene in the compacted mix is studied for various engineering properties by preparing Marshall Samples of BC mixtures with and without polymer. Marshall Properties such as unit weight, flow value, stability, air voids are used to determining the optimum polythene content for the given grade of bitumen (80/100).

Keywords: Polythene Recycling, Bituminous Concrete, Flexible Pavement, Rigid Pavement.