

Use of waste plastics and copper slag (CS) for low cost bituminous roads

Solid waste management has become a major environmental issue in India, which seeks to minimize the health, environmental and aesthetic impacts of solid waste. Disposal of many million tons of non-decaying plastics waste and copper slag (CS) is responsible for health hazards and degradation of environment. The use of waste plastics and copper slag, in hot bituminous mixes to enhance the pavement performance, to protect the environment and to provide low cost roads is the need of hour. The physical properties of waste plastic modified bitumen (WPMB) were tested and found within specified limits as per IS: 15462-2004. Using 60/70 and 80/100 bitumen, waste plastic modified bitumen was prepared in laboratory and Delhi quartzite aggregate, stone dust, lime and copper slag (10, 15 and 20 %) were mixed to prepare Marshall specimens. The Marshall specimens were tested for density, stability, flow, retained stability and indirect tensile strength. 15 % copper slag showed the best in three variables. CRRI is in position to offer this mix technology to field engineers.

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