

Using Crump Rubber (CR) of Scrap Tire in Hot Mix Asphalt Design

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Abstract

Hot Mix Asphalt (HMA) design is one of the most important types of pavement used in highway construction. This research provided a hot mixture design method modifying with Crump Rubber Scrap Tire (CR) in order to develop and determining the optimum additive for hot mix asphalt design. All tests conducted to the raw material including specific gravity, compact test and absorption content to ensuring its quality. In this research, hot mix designed as a stander without any additives and with (4.5, 5, 5.5, 6, 6.5 and 7%) percent of asphalt content. All specimens of each asphalt percent content were tested after 24 h, according to AASHTO. The additives in this research were prepared by two methods (wet process and dry process). The results show that in dry process all additives cause a failure and the segregation was the major reason for failure. In wet process the selected wet process at 5.5% CR by weight of binder content was optimum were its raising the stability value to 65% of original stability in standard mix, which lead to decreasing the rutting effects.