

Green Materials for Hot Mixed Asphalt Production

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Abstract : Reclaimed asphalt, used automobile tires and rice husk, were regarded as waste. These materials could be used in construction of new roads and for roads rehabilitation. Investigation into the production of a Green Hot Mixed Asphalt (GHMA) pavement using Reclaimed Asphalt Pavement (RAP) as partial replacement for coarse aggregate, Crumb Rubber (CR) from waste automobile tires as modifier for bitumen binder and Rice Husk Ash (RHA) as partial replacement of ordinary portland cement (OPC) filler, for roads construction and rehabilitation was presented. 30% Reclaimed asphalt of total aggregate, 15% Crumb Rubber of total binder content, 5% Rice Husk Ash of total mix, and 5.2% Crumb Rubber Modified Bitumen content were recommended for optimum performance. Loss of marshal stability was investigated on mix with the recommended optimum CRMB. The mix revealed good performance with only about 13% loss of stability after 24 hours of immersion in hot water bath, as against about 24% marshal stability lost reported in previous studies for conventional Hot Mixed Asphalt (HMA).

Keywords : rice husk, reclaimed asphalt, filler, crumb rubber, bitumen content green hot mix asphalt

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