

ABSTRACT

Low Cost Road Strategies

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Laboratory testing of core samples obtained in the field from the Charlieville and Debe land development projects, were performed to assess bituminous construction practice. These tests consisted of determination of bulk specific gravities of the samples which were used to calculate the adjusted Marshall stabilities. The Marshall flow was measured on the Chart Recorder connected to the Marshall testing machine. Bitumen content testing of samples were conducted to determine the consistency of concrete production. The bitumen content was found to vary from 6.6% to 6.9% for Charlieville and 6.07% to 9.33% for Debe.

Theoretical Maximum specific gravity tests were conducted for selected samples, from which the voids in the mineral aggregate air voids and percentage air voids were computed. Sieve Analyses were performed on the aggregate component of the samples after the bitumen was removed.

For the Debe site the gradation was generally within the specified band, but not so for the Charlieville site.

Investigation of various road building strategies employed by government agencies and in the oil and agriculture industries, was carried out in order to adopt a strategy of two-staged road construction. The first stage consists of provision of a gravel layer only which would be overlaid by asphaltic concrete in the second stage.

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