

# **Prediction of pavement rutting from laboratory characterization tests.**

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## **Abstract**

This research aims to evaluate the available rut depth prediction models for local application. RUT DEPTH, PDMAP, and VESYS computer programs are the three available prediction models in the mainframe computer of the King Fahd University of Petroleum and Minerals (KFUPM). In this study, three road sections were selected in the Eastern Province of Saudi Arabia. Cores, asphaltic concrete slabs, and subbase materials were collected from these sections. The dynamic diametral tests were conducted for laboratory characterization, where Resilient Modulus (M), fatigue, and permanent deformation tests were carried out on laboratory Marshall fabricated specimens using the extracted aggregates from existing pavements. Laboratory characterization results were used in the rut prediction model 'VESYS' together with the collected environmental data. VESYS was found the best suitable model for rut depth and pavement performance prediction. However, VESYS was calibrated for rutting and fatigue by using the shift factor concept to laboratory results.