DETERMINATION OF THE MECHANICAL PARAMETERS OF PAVEMENT MODELS : REVIEW

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SUMMARY

During the last decade a great variety of apparatus and relevant methodologies has been developed in order to assist engineers in evaluating pavement strength in the most satisfactory way. In this process, the accuracy of estimating the properties of the individual pavement layers is a key factor in developing satisfactory simulation models of the pavement response to loading as well as of their long-term performance over time. Nevertheless, serious mistakes may arise in such an evaluation process if all assumptions and weaknesses of the methods are not considered properly. Furthermore, an attempt to merge all methods in order for an integrated evaluation process to be provided may also lead to serious mistakes.

A series of methodologies that avoid such problems and enable the reliable structural evaluation of the roads, are presented in this paper. These methodologies are being used in determining the mechanical parameters of the pavement layers, i.e. elasticity (or stiffness) modulus and Poisson ratio. The way in which the results of the laboratory tests should be used in developing computer aided models is being examined. Finally, the success of simulating the actual on site conditions at the laboratory as well as at the computer models is also being discussed.