

**AN INVESTIGATION TOWARDS THE APPLICABILITY OF
FINITE ELEMENTS FOR THE BACKCALCULATION
ANALYSIS OF ASPHALT PAVEMENTS**

by A. Loizos, G. Deliporanidis and P. Theodoropoulos

ABSTRACT

The present research work, focuses towards the practical applicability of finite elements as a tool for the backcalculation analysis of existing asphalt pavements. For this purpose the finite element software program FELPA, has been developed and verified using data obtained through in situ Non Destructive Tests. The backanalysis of the measured deflection data based upon FELPA, was quite satisfactory at least compared with relevant results obtained through well known backanalysis software based upon the multi layer theory. It is believed that the encouraging results based upon the present experiment, will constitute a guarantee towards a future development, by the Laboratory of Highway Engineering of the NTUA, of a backanalysis program for nonlinearity, which will be based on FELPA.