

# A Laboratory Tool Used to Evaluate the Reflective Cracking in Overlay Asphalt Pavement

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## **Abstract**

The causes of reflective cracking can be either environmental and/or load associated. The simultaneous movements of an overlay caused by wheel loads (vertical movements), temperature changes, temperature gradients (horizontal movements) induce a complex stress state of cyclic bending tension, and shear within the overlay.

Different types of tools are used to simulate the mechanism of reflective cracking in the laboratory, in this research only the tool which simulates the effect of temperature variation (horizontal movement) is studied. Overlay Testing Equipment is constructed and tested in Iraq. All the tested samples are beams of dimensions 7.6cm width, 38.1cm length with different thickness. Three parameters are taken in this study, filler type, thickness of asphalt concrete beams and additives and their effects on the properties of asphalt concrete mix. From the results, the samples prepared by limestone as a filler give higher number of cycles than that prepared by cement, the samples of high thickness give higher number of cycles and the control sample gives best results than modified samples.