

## MODIFIED STRAIN CONTROLLED ITFT TESTING PROCEDURE; DEVELOPMENT AND RESULTS

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### *ABSTRACT*

Indirect Tensile Fatigue Testing (ITFT) is a method commonly used to investigate the fatigue resistance properties of asphaltic mixtures. The method's main characteristic is that the force applied on the tested specimen is a constant load pulse that generates a steady (constant) horizontal stress in the specimen, thus letting the resulting strain increase as the asphalt mixture specimen fails through fatigue damage.

This paper explores the use of a modified strain controlled ITFT testing method by altering the constant stress characteristic to a constant strain equivalent. It aims to explore the feasibility of the new approach in terms of the test set up, equipment and software needed. The results are also analyzed and compared to the standard ITFT testing results, so that a general conclusion can be made about the new method's robustness.

The results show that the testing guide for the modified strain controlled ITFT method has been successful and the testing procedure has been proved to be robust and able to deliver logical results. The modified ITFT testing results have a structure that appears logical and is constant for all the tests undertaken to date under these conditions.

**KEY WORDS:** ITFT, fatigue, strain controlled, NAT, target level, stiffness modulus