

INFLUENCE OF COMPACTION METHOD ON STIFFNESS PERFORMANCE OF ASPHALT SPECIMENS

P. Georgiou, A. Loizos & A. Leventis

National Technical University of Athens, Laboratory of Pavement Engineering,
Athens, Greece

ABSTRACT

Stiffness modulus of HMA is a fundamental material property, hence can be considered as a key element for the characterization of mix performance. Laboratory determination of stiffness modulus involves fabrication of asphalt specimens subjected to repeated loading. Over the years numerous laboratory compaction methods have been developed in an attempt to accurately simulate field conditions. Although has long been recognized and well documented from pavement engineers that the varying laboratory methods create volumetrically identical but mechanically different specimens, still no consensus has evolved as to which method is the best. In this paper the effect of three of the major laboratory compaction methods (namely, Marshall, gyratory and roller) and its factors on the indirect tensile stiffness of various asphalt mixtures is investigated. From the comparative analysis conclusions are derived as to which laboratory compaction method best emulates field compaction. More details and discussion are outlined in the paper.