ABSTRACT

Temperature is an important factor influencing stress and deflection in concrete pavements. Temperature variation tries to cause bending as well as expansion/ contraction in the concrete pavement typically idealized as slab. Since these bending and expansion/ contraction phenomena are restrained by self-weight, pressure from underlying layer and frictional force between slab and underlying layer, thermal stress induces in slab. Large thermal gradient may cause separation (or disconnection) between a portion of slab and underlying layer. In present study deals with analysis of a beam resting on rigid and elastic foundation including the effect of partial separation for day-time conditions. The analysis starts with a simpler problem of thermoelastic plate and gradually a more realistic pavement problem is reached. Comparison s between different cases are also presented.

