THE PERMISSIBLE TEMPERATURE OF NEWLY LAID ASPHALT AT OPENING TO AIRFIELD TRAFFIC

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ABSTRACT
The increase in 24-hour airport operation and activity has limited the periods available for the execution of airport pavement rehabilitation. The early opening of asphalt overlays to traffic would reduce the overall rehabilitation period due to more volume done each night. On the other hand, the insurance of adequate cooling before opening to traffic is essential to protect the freshly paved section against premature damage. The objective of this study was to investigate the permissible asphalt temperature at opening to traffic. A review of published studies of asphalt pavement performance at high temperature is presented in this paper. Furthermore, a repeated load axial test (RLAT) is performed to investigate the rutting performance of asphalt at elevated temperature. In addition, a simple calculation of cooling time of newly laid asphalt overlay is performed using the MultiCool program to investigate the effect of selected permissible temperature on project lag time/closure time. The studies show that, in the term of rutting performance, opening the new asphalt to traffic at temperature of 60°C (or below), would be reasonably acceptable for typical asphalt mixture in airfield.