

TR-392 Review of Cold In-Place Recycled Asphalt Projects

Key Word: Cold In-Place, Recycled, ACC, Asphalt

ABSTRACT

Highway Research Project BR 392 was undertaken to evaluate cold in place asphalt recycled (CIR) projects in the State of Iowa. The research involved assessment of performance levels, investigation of factors that most influence pavement performance and economy, and development of guidelines for CIR project selection.

The performance was evaluated in two ways: Pavement Condition Indices (PCI, U.S. Corps of Engineers) were calculated and overall ratings were given on ride and appearance. A regression analysis was extrapolated to predict the future service life of CIR roads. The results were that CIR roads within the State of Iowa, with less than 2000 annual average daily traffic (AADT), have an average predicted service life of fifteen to twenty six years.

Subgrade stability problems can prevent a CIR project from being successfully constructed. A series of Dynamic Cone Penetrometer (DCP) tests were conducted on a CIR project that experienced varying levels of subgrade failure during construction. Based on this case study, and supporting data, it was determined that the DCP test can be used to evaluate subgrades that have insufficient stability for recycling.

Overall, CIR roads in Iowa are performing well. It appears that the development of transverse cracking has been retarded and little rutting has occurred. Contracting agencies must pay special attention to the subgrade conditions during project selection. Because of its performance, CIR is a recommended method to be considered for rehabilitating aged low volume (< 2000 ADT) asphalt concrete roads in Iowa.