

TR-403 A Comprehensive Quality Incentive Program for PCC Paving

Key Words: PCC, Paving, Highway Construction

ABSTRACT

The goal in highway construction and operation has shifted from method based specifications to specifications relating desired performance attributes to materials, mix designs, and construction methods. Shifting from method specifications to performance based specifications can work as an incentive or disincentive for the contractor to improve performance or extend pavement life. This literature search was directed at a review of existing Portland Cement Concrete (PCC) performance specification development, and the criterion that can effectively measure pavement performance. The criterion identified in the literature include concrete strength, slab thickness, air content, initial smoothness, water cement ratio, unit weight, and slump. A description of each criterion, along with the advantages, disadvantages, and test methods for each are identified.

Also included are the results from a survey that was sent out to various state, federal, and trade agencies. The responses indicated that 53% currently use or are developing a performance based specification program. Of the 47% of agencies that do not use a performance based specification program, over 34% indicated that they would consider a similar program. The most commonly measured characteristics include thickness, strength, smoothness, and air content.

Lastly, recommendations and conclusions are made regarding other factors that affect pavement performance and a proposed second phase of the research is suggested. The research team suggests that a regional expert task group be formed to identify performance levels and criterion. The results of that effort will guide the research team in the development of new or revised specifications.