LONGITUDINAL JOINT CONSTRUCTION FOR HOT MIX ASPHALT PAVEMENTS

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RESEARCH

Introduction

The longitudinal joints between asphalt mats often deteriorate faster than other areas. The primary reason is believed to be the lower density achieved at the joints. A uniform density gradient is desirable through out the asphalt pavement mat. However, because of the difficulty in compacting the unconfined edges, lower density zones occur at the joints. The density gradient arises from the low density at the unconfined edge when the first lane is paved, and relatively high density at the confined edge when the adjacent lane is paved.

Project Description

The objective of this research project was to conduct a literature review on longitudinal joint construction for hot-mix asphalt pavements. The review covered the issues related to the principles of hot-mix asphalt paving and compaction for longitudinal joint construction, longitudinal joint problems, and some longitudinal joint construction techniques and specifications from different studies.

Project Results

Based on this literature review, the following conclusions can be drawn:

1. Longitudinal joints in asphalt pavements with high densities generally show better performance than those with relatively low densities.

2. Longitudinal joint performance is not satisfactory in most of the states. The joint construction practices and specifications vary widely from state to state. A majority of the states have configuration-type specifications.

3. The compactors have significant effects during compaction of longitudinal joints. The ability to change the characteristics of the vibration on the vibratory compactors rapidly enough to satisfy changing job conditions is important. However, there is still a need for defining the rolling pattern.

Report Information

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