

## **BRIDGE DECK ASPHALT PLUG JOINTS: PROBLEMS AND SOLUTIONS**

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### *ABSTRACT*

Asphalt Plug Joint (APJ), which serves as an expansion joint, is a flexible asphalt segment that spans between the bridge deck and abutment. As an expansion joint, it is required to allow bridge movement caused by expansion and contraction, to provide a smooth transition between the approach pavement and the bridge deck, to remain watertight and durable, and to keep debris entering the gap between the bridge deck and the abutment. In the United States, majority of state departments of transportation rely on manufacturers to design and construct Asphalt Plug Joints. Lack of available specifications/guidelines on type and quality of materials, proper joint geometry, effective compaction, suitable in-place temperature have contributed to premature failure of these expansion joints, resulting in uncomfortable and unsafe driving conditions and increasing maintenance costs. This paper describes the sources which can contribute to the premature failure of asphalt plug joints and offers appropriate mitigation solutions.