



Project Title: A Balanced Approach to Performance of OGFC

Problem Description

Open Graded Friction Course (OGFC) is a porous asphalt mixture placed on the roadway surface and designed to enhance user safety and convenience by improving friction, visibility, noise reduction, and rideability. One of the main benefits is water penetration through its porous structure. Water penetration reduces vehicle splash and spray during rainfall increases driver visibility and friction on the surface. Since the 1950s, several state Departments of Transportation (DOTs) have utilized Open-graded Friction Course (OGFC) pavements, known for their porous nature that allows rainwater to drain underneath, potentially reducing wet-weather crashes. The Tennessee Department of Transportation (TDOT) has implemented OGFC on over 300 centerline miles, primarily on interstates since 2005. This initiative aims to mitigate wet-weather accidents, with observed data indicating a 32% reduction in such crashes on evaluated sections ^[Error! Reference source not found.]. With OGFC's structural performance comparable to traditional dense-graded pavements and the observed safety benefits, TDOT plans to increase the use of OGFC, reinforcing its commitment to improving roadway safety in conditions prone to wet-weather accidents.

Research Objectives

Summarize current OGFC implementation including possible issues and improvements.

Summarize potential solutions for possible issues and limitations of OGFC. Evaluate the laboratory performance of OGFC with different variable factors such as gradations and volumetrics, and recommend optimal design and rational laboratory testing procedures for OGFC mixes for their durability and permeability.

Potential Implementation and Expected Benefits

This proposed research will significantly benefit TDOT in the following aspects:

1. New methodologies and technical information on OGFC design will be available to implement across Tennessee.
2. Detailed design procedures will be established, serving as foundational blueprints for future OGFC projects that will aid in strategic planning for the broader application of OGFC.
3. If applicable, improved performance and extended service life of OGFC pavements in Tennessee could reduce maintenance and rehabilitation, resulting in significant cost savings.

Project Number:

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TDOT Lead Staff:

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Project Term:

(September 2024) to (August
2026)