



ABOUT THIS PROJECT

PROJECT NAME: VKelly Slipform Paving
Vibration Test Pooled Fund

PROJECT NUMBER: TPF-5(498)

PROJECT FUNDING PROGRAM:
State Planning and Research

PROJECTED END DATE: March 2025

PROJECT CHAMPION:
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RESEARCH IN PROGRESS

Enhanced VKelly test offers improvements to onsite pavement mixture measurements

Agencies and contractors responsible for road construction are continually searching for materials and techniques that deliver the highest quality results while also prioritizing output and ease of use. The Vibrating Kelly Ball (VKelly) test is a viable replacement for the more familiar slump test to measure workability of a pavement mixture and warrants further study. A new [multistate pooled fund](#) led by Iowa DOT is addressing this need.

Roads made with portland cement concrete can be constructed more efficiently by slipforming, or pouring and shaping the concrete at the same time. Specialized slipforming equipment requires a specific consistency of concrete mixture in order to deposit the material evenly, so measuring the mixture before

work begins is essential. Initial assessment of the VKelly test has confirmed it can provide reliable and repeatable data on paving mixtures for slipforming and other applications.

VKelly testing equipment was shared with transportation agencies around the country. Their feedback identified operational challenges such as the need for two operators, an external power source, and a computer for entering data. The equipment was also limited to use with certain types of concrete mixtures. On behalf of the pooled fund, Iowa DOT has engaged researchers to study the VKelly test to better understand the science behind it and recommend potential improvements to the testing equipment.

In addition to making the equipment

more user-friendly, the research will produce a technical brief and video with guidance for operators as well as a revision to the AASHTO standard that outlines the current VKelly testing method.

“Iowa DOT and all pooled fund members can benefit from a better version of the VKelly test adapted for simpler and broader application,” said Todd Hanson, Iowa DOT’s liaison.

The study is expected to conclude in March 2025.

To learn more about this project and subscribe to updates, visit [Idea #3441](#).

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