

Concrete Pavement Quality Control Testing Requirements Needed for the Super Air Meter

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Introduction

Concrete freeze-thaw durability is prominently linked to the air void system within the concrete. Concrete pavements in Kansas undergo repetitive freeze-thaw cycles. Total air content measurements currently used on fresh concrete do not provide any indication of the air void size distribution. The Super Air Meter (SAM) addresses this issue by providing the air content and an additional number, the SAM number, which is claimed by the manufacturer to correlate to the concrete hardened air void spacing factor.



Super Air Meter Testing and Cylinder Making

Project Description

In order to determine the variability and the frequency of testing needed for the SAM test, 16 sites across Kansas were investigated. The SAM test was performed at least once for every hour of paving.

Project Results

This study found that the SAM number has a 154 percent higher coefficient of variation per site than the total air content. It was also seen that there is a correlation between the air content and the SAM number. It is recommended that the Kansas Department of Transportation (KDOT) perform the SAM test at least four times per site per day.

Project Information

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