Super Air Meter

Device

Procedure

Importance

What

The Super Air Meter is a device that measures both air void spacing and air void content of fresh concrete samples in less than 10 minutes. It provides conventional air content per ASTM and AASHTO standards and a new value called the SAM number, proven to correlate with air void spacing.

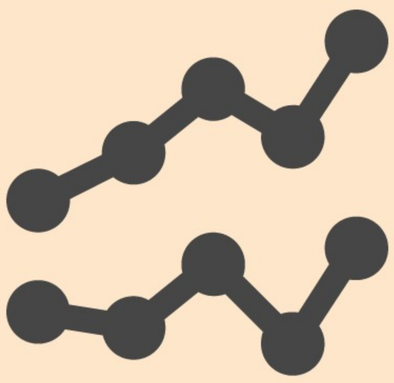
How

Two sequential pressurization cycles are applied to the concrete sample. In each sequence, increments of 14.5, 30, and 45psi (1, 2.1, and 3.1bar) are applied to the concrete and a deformation value is obtained. The SAM number is the difference between these values and correlates to the average spacing between air voids.

Why

Overall quality of the air void system is based on the presence of small, well-dispersed air bubbles. The determination of air void spacing has proven to be a better indicator of freeze-thaw durability than total air content alone. SAM measurements are a new value that closely correlates with air void spacing and makes resistance to these forces significantly easier to predict. Optimum spacing of air voids can also reduce overall air content required for concrete to resist freeze-thaw damage.

- Wipes out the need to wait weeks for results of standard tests on hardened concrete
- Meets ASTM and AASHTO requirements for conventional air tests
- Meets AASHTO Provisional Standard TP 118 and is widely used nationally
- Prompts user through required steps with preprogrammed electronic digital gauge



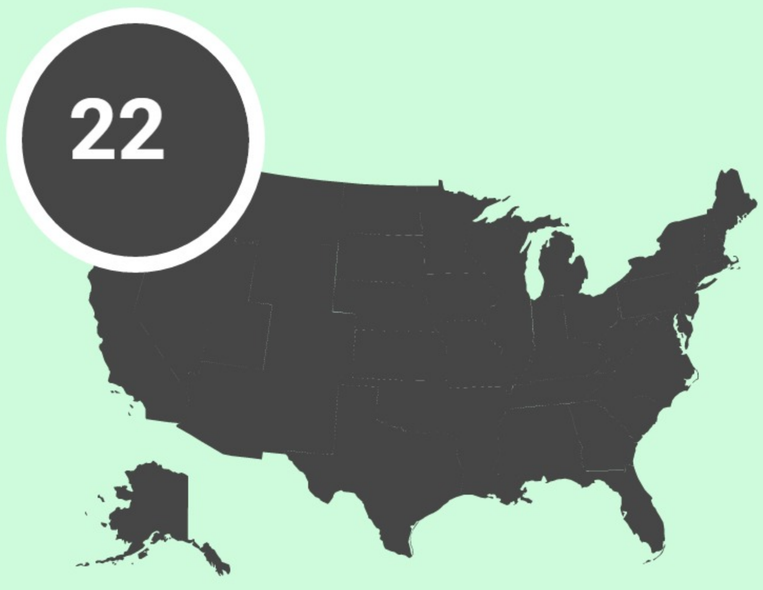
Numbers Breakdown

Results

A higher SAM number indicates increased susceptibility to freeze-thaw deterioration.

0.20

Extensive research during development shows that a SAM value of 0.20 indicates 90% certainty that the spacing meets ACI durability recommendations.



Industry Adoption

Use

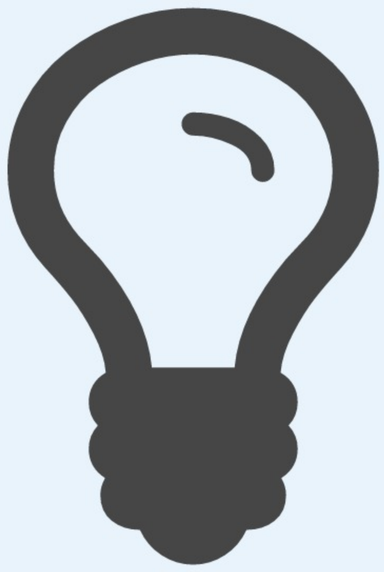
Investigated using over 300 lab and field mixtures at Oklahoma State University & FHWA Turner Fairbanks Labs.

Specified for transportation projects in Oklahoma & Michigan.

Currently used by 10 different DOTs on field concrete, and for projects in 22 U.S. States and one Canadian Province.

Results are being compared to performance in ASTM C666 rapid freeze-thaw test.

AASHTO Provisional Standard TP118 for this test has been approved.



FAQs

Tips

Use wherever a good air void system is critical for freeze-thaw durability.

Fill and consolidate the unit weight bucket with concrete the same way you would with a Type B (Three equal lifts and rod each lift 25 times).

Clean the rim of the unit weight bucket and the o-ring of the SAM lid before securing the lid clamps.

Achieve optimal efficiency for field testing with the CAPE Tank accessory.

Follow the prompts from the programmed digital gauge for an easy, guided operation.

For more information about the Super Air Meter and how it can help with your concrete testing needs, contact a Gilson representative today at 1-800-444-1508.