

Quarterly Newsletter

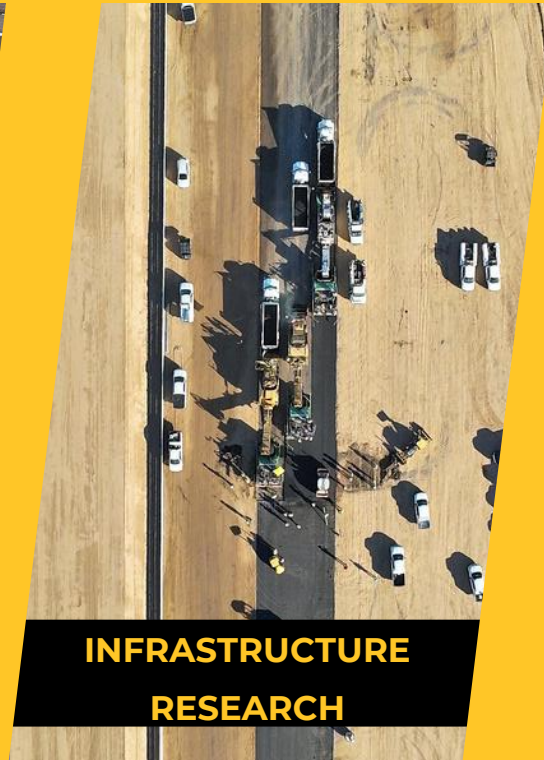
October, 2026

ASU Ira A. Fulton Schools of
Engineering
Arizona State University
Southwest Pavement Technology

Southwest Pavement Technology Consortium



**WORKFORCE
TRAINING**



**INFRASTRUCTURE
RESEARCH**



**DATA &
COMMUNICATION HUB**

**BRIDGING
RESEARCH**



**TO
PRACTICE**

Upcoming Events

**“Workshop: Best Practices for
Construction of Longitudinal Joints”
October 15, 2026**

**“Training: Asphalt Pavement Production,
Construction Quality and Forensics”
January 15, 22, 29, 2027**



Research Updates

COARSE VS. FINE GRADATION

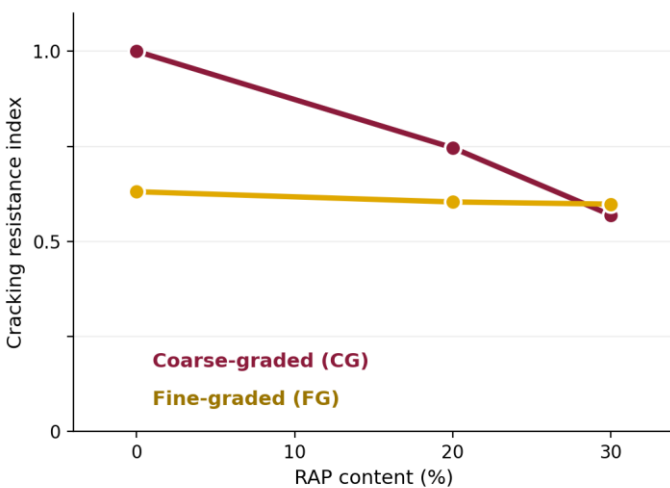
Two dense-graded mixes can meet the same Superpave design targets and still behave very differently. A coarse-graded (CG) and fine-graded (FG) blend were built from the same aggregate stockpile, with the same voids in mineral aggregate (VMA), to isolate how particle arrangement alone affects performance. Both gradations are commonly used in Arizona.

Same mix requirements, different particle structures:
CG packs more coarse aggregates in a mix whereas FG is carried by the fine fraction.



**Coarse
Graded**

**Fine
Graded**



GRADATION INFLUENCES THE EFFECT OF RAP

Without recycled asphalt (RAP), gradation made a big difference in cracking resistance. Adding more RAP shrinks the difference. By 30% RAP, both gradations show similar cracking behavior.

Major findings from the research

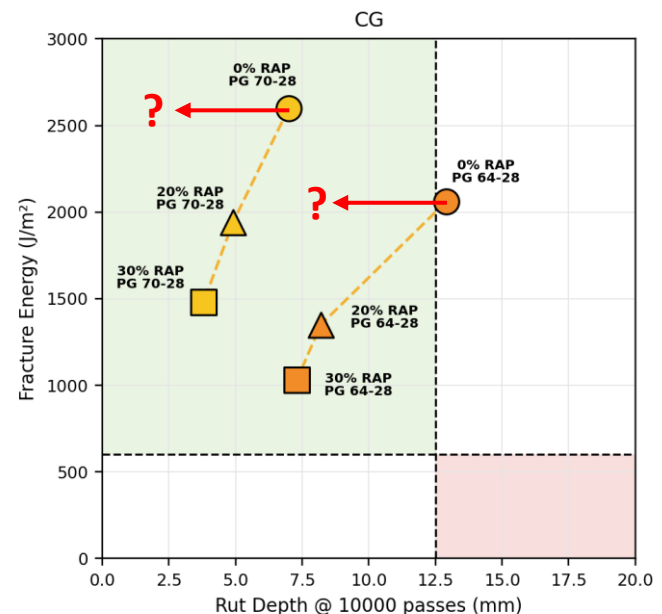
- Gradation by itself can make or break a mix's lab performance — a key factor to watch in Balanced Mix Design (BMD).
- Pairing the right gradation with the right binder grade and content can lower the risk.

BALANCING RAP, BINDER, AND CRACKING RESISTANCE

CAN RAP IMPROVE RUTTING WITHOUT COSTING CRACKING RESISTANCE?

RAP typically comes with a catch: better rutting resistance and lower cost, but a greater risk of brittle, crack-prone mixes. Our research is looking for mix designs where that trade-off doesn't have to happen. When volumetrics are controlled, pairing RAP with a softer binder grade and the right additive can bring cracking resistance back to virgin-mix levels. A range of binder grades and additives are currently being evaluated as part of the study.

There is no single "best" binder, gradation, or RAP content.
We should balance all three based on each mix's project-specific risks, performance targets, and budget.



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From Drones to Doctorate



Congratulations

Dr. Naaga Vedula



Celebrating Our Newest Graduate



Congratulations to Dr. Naaga Vedula, who graduated this summer with his Ph.D. in Civil, Environmental and Sustainable Engineering from ASU under the guidance of Dr. Hasan Ozer. Naaga's research led to development of a UAV-based thermal monitoring framework that can help with detection of thermal segregation and tracking compaction effort during asphalt paving.

We thank Naaga for his contributions to the consortium and wish him every success in his next chapter. Forks up! 🍴

“

We extend our deepest gratitude to every agency, contractor, and industry partner involved; you are the cornerstones of this consortium, and together, we are building the future of our region's infrastructure.

”

Southwest Pavement Technology Consortium!



Our Esteemed Members



Director: Hasan Ozer, Ph.D., P.E.

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