Georgia's Construction Experience Using PMA Hot Mix Asphalt

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Bituminous Construction

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Binder Used in Georgia

- PG 67-22 is standard grade used for HMA
  - PG 64-22 may be approved for use in HMA using > 25 % RAP
- PG 76-22 is grade used when PMA required

PG 76-22

PG 64-22

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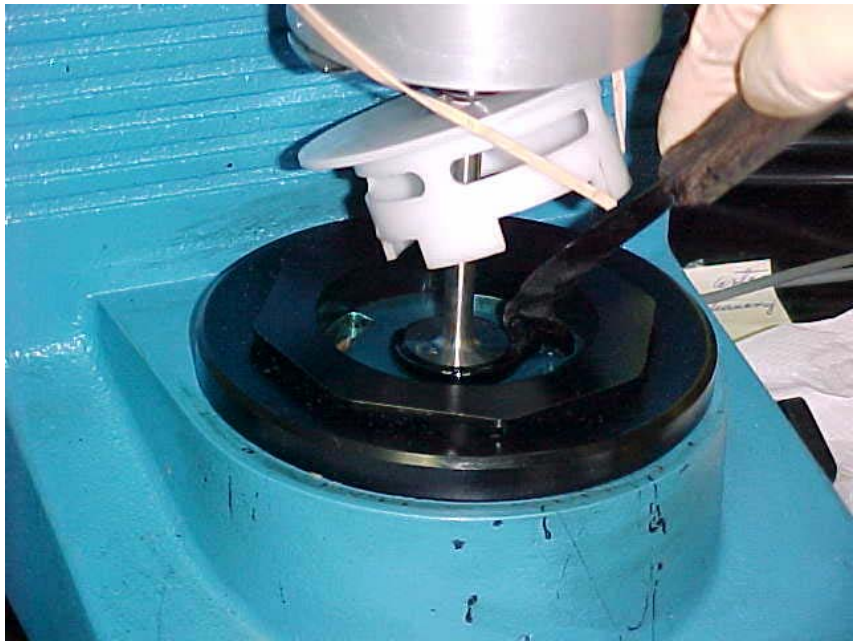
Polymer Modified Binder

- SB or SBS approved as modifier
- Must meet phase angle of ≤ 75 Degrees



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7.5 Million Tons of HMA Placed in Georgia in 2005

- 483,000 Tons of PMA Superpave mix
- 171,000 Tons of SMA
- 134,000 Tons of Porous European Mix
- 81,000 Tons of Open Graded Friction Course
- 869,000 Tons of HMA using PMA

Quantities of Binder Used in Georgia in 2005

- More than 93 million gallons
- Nearly 11 million gallons of PMA

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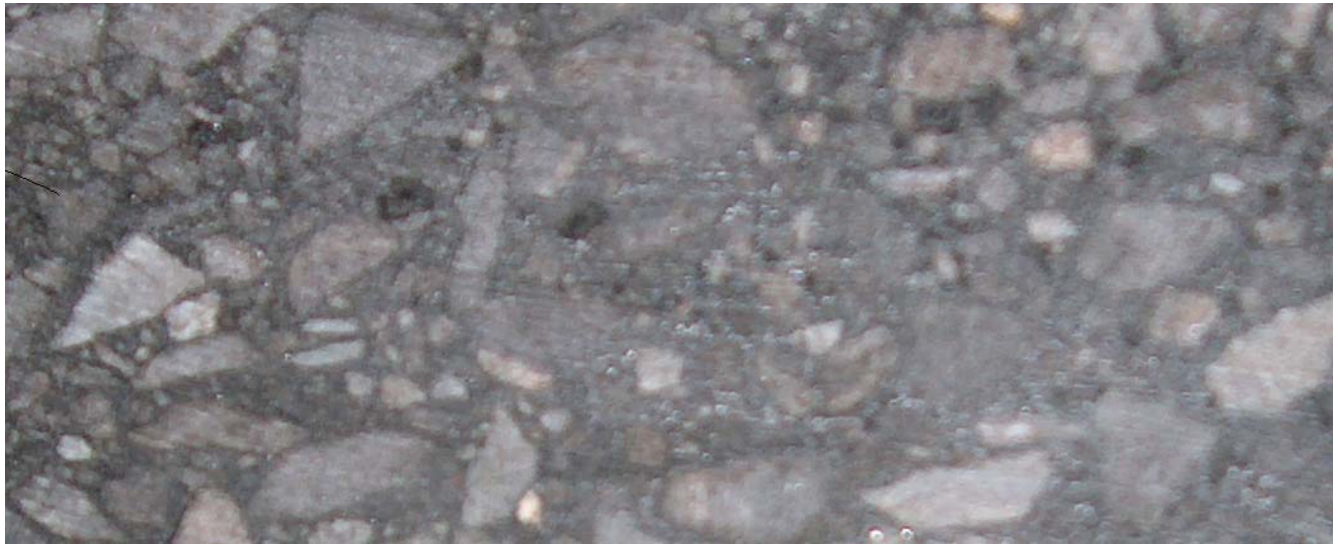
Dense-Graded Conventional Mixes with PMA

- **Used on State Routes**
  - **ADT ≥ 25,000 but < 50,000 ADT**
- **Typically Used in 12.5 mm Superpave mixes**



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Rehabilitating Pavements

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Are PMA Mixes a Miracle Cure? NO But……

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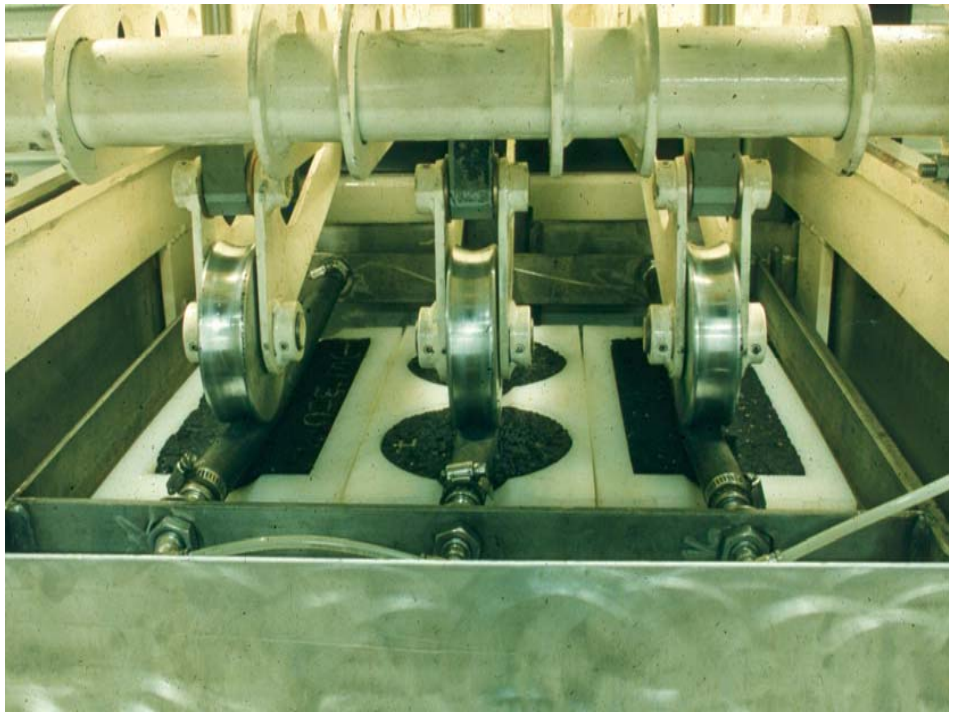
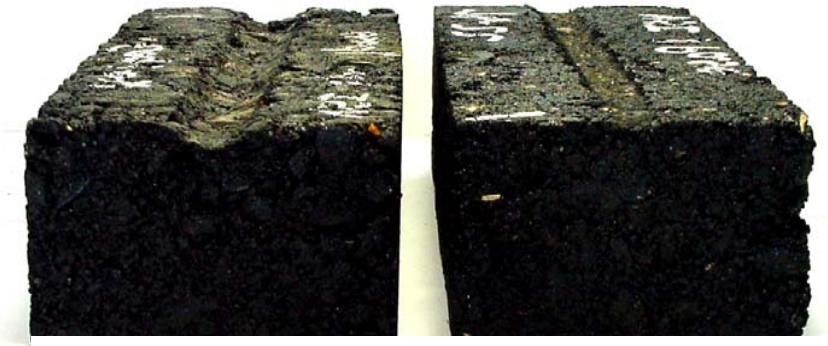
Rut Tester – Asphalt Pavement Analyzer (APA)





PG 64-22 **PG 76-22**

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Construction with PMA Mixes

Lessons Learned

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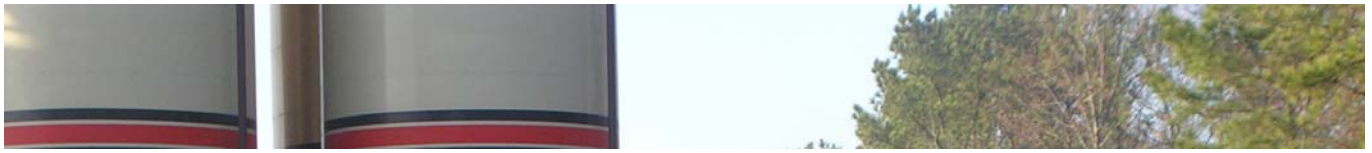
PMA Mixes are “sticky”



Georgia’s Qualified Products List

QPL-39 Asphalt Release Agents

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Separate AC Tanks at the Asphalt Plant are Recommended

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Rubber Tire Rollers are Possible on Conventional PMA Mixes

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National Asphalt Paving Association

Quality in Construction Award Winner

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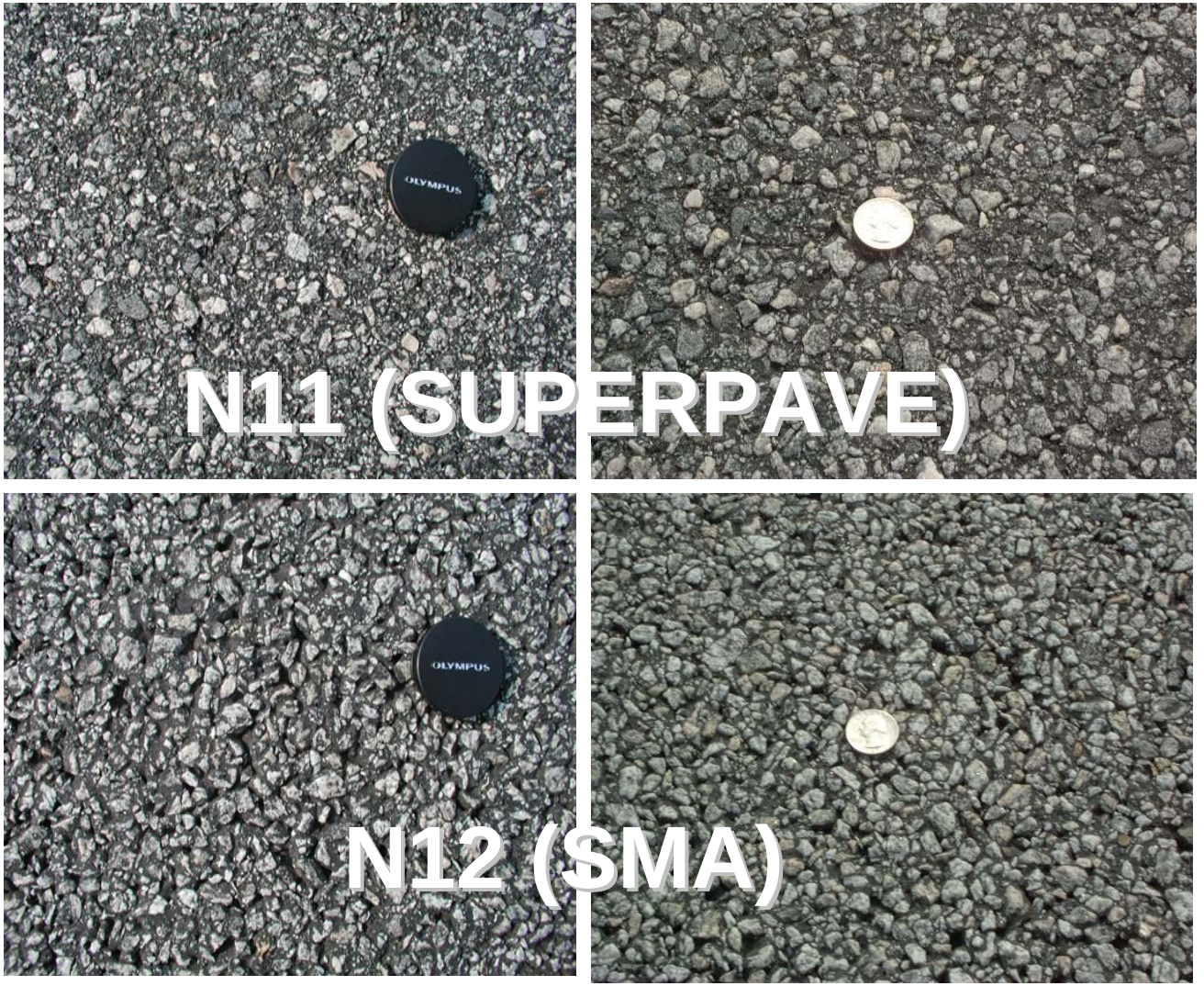
NCAT Test Tract (Georgia's Sections)



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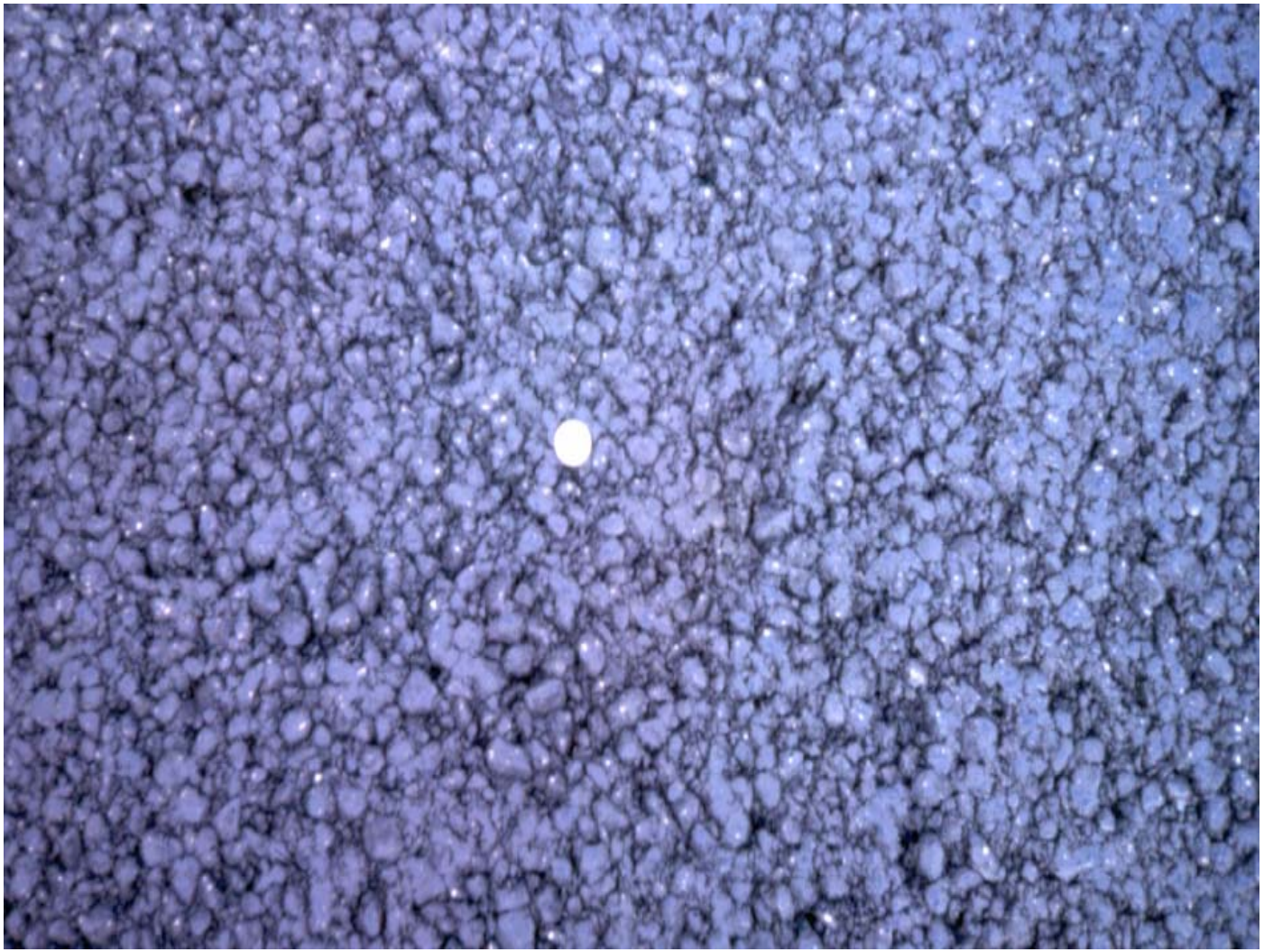
SMA in Georgia

- Began placing test sections in 1991
- Now standard policy for all Interstates
- Used on State Routes with ADTs > 50,000
- More than 3.5 million tons placed



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Components of Georgia's SMA

Aggregate

- (Typically No 007s, 089s and M/W10s)

PMA

Mineral Filler

Fiber Stabilizer

Hydrated Lime

SMA Interstate Construction

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SMA

Lessons Learned

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Typically Produced at Higher Temperatures **(320-335°F)**

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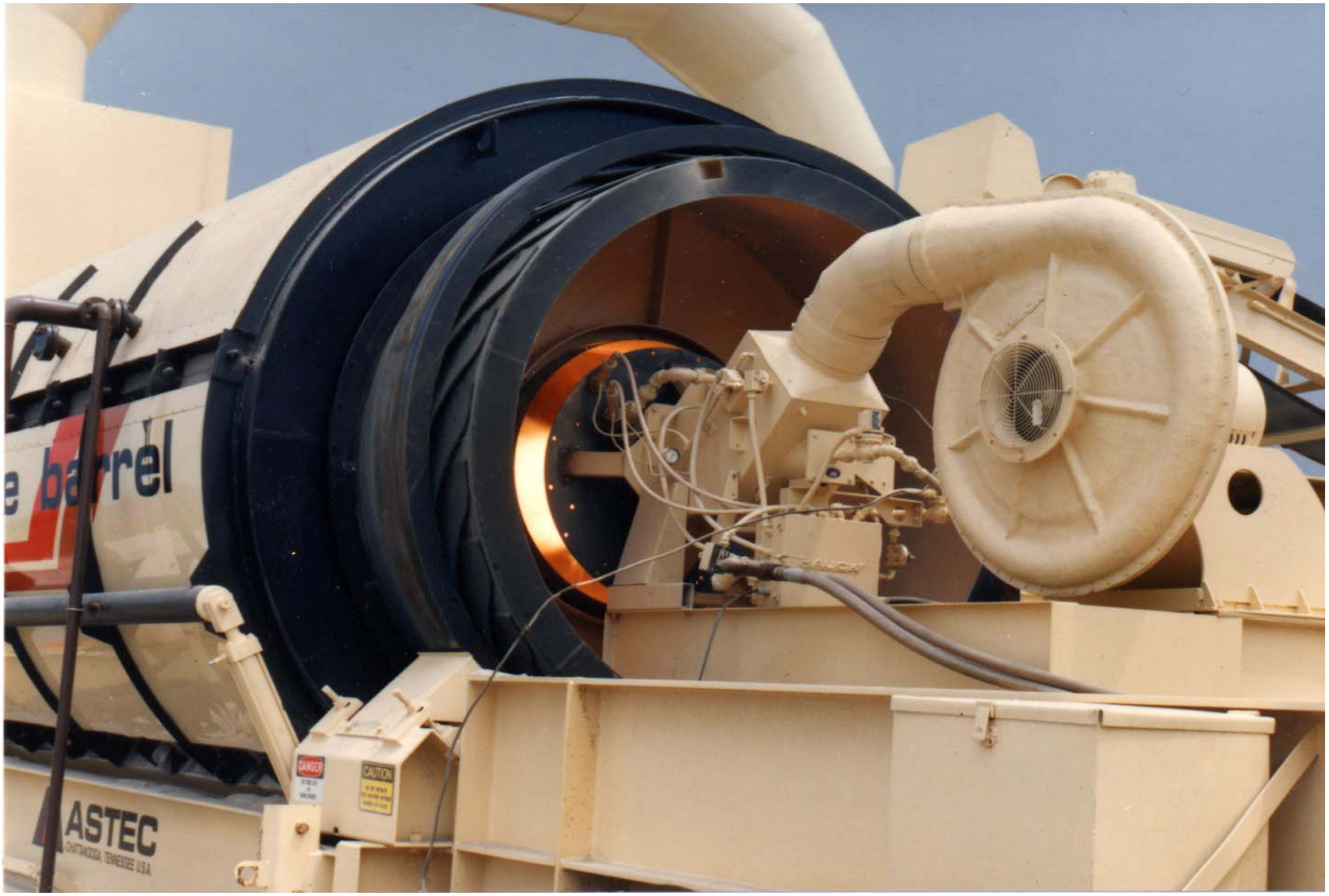

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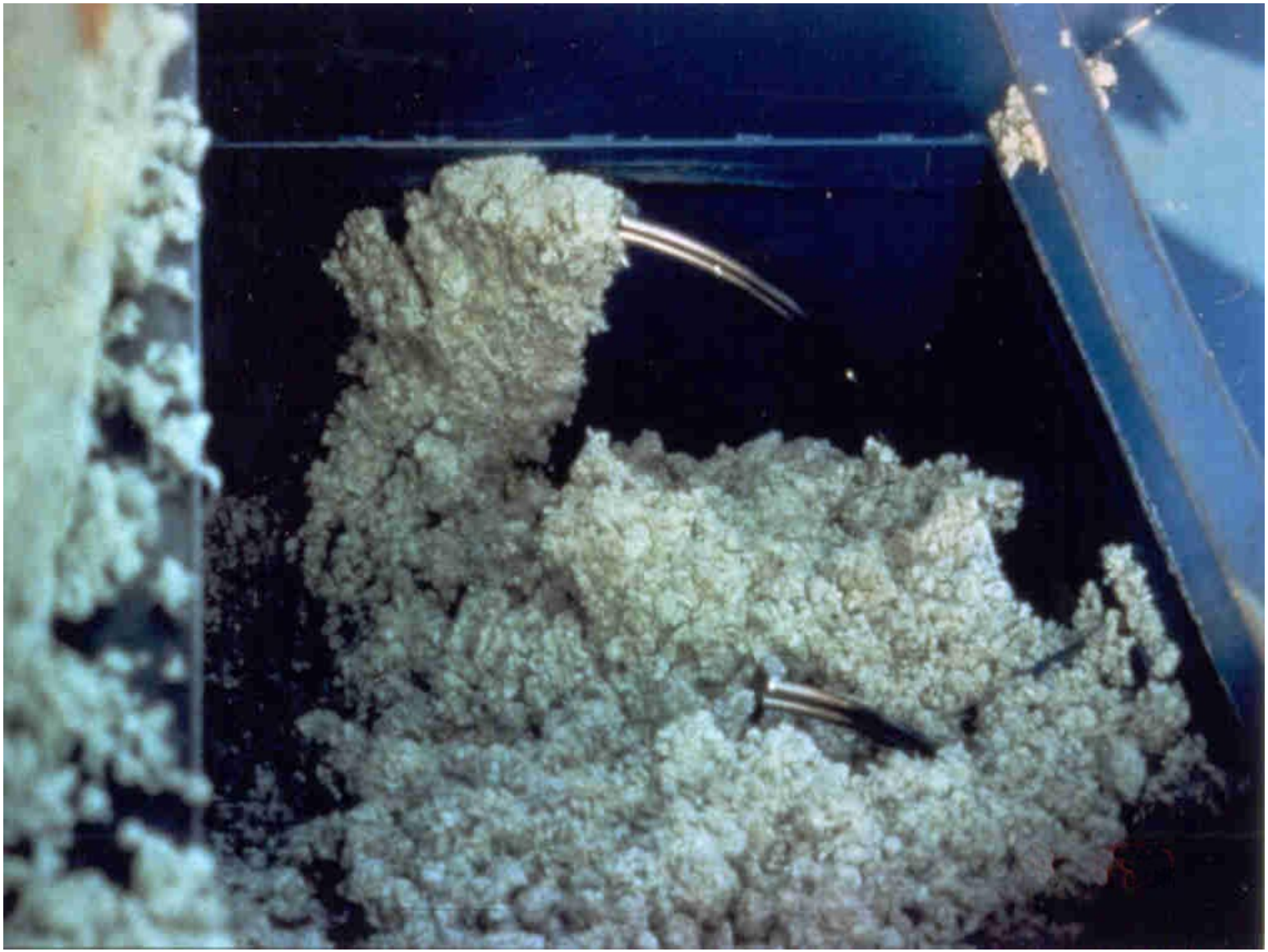

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Get it Right the First Time

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Historical Overview of Georgia's OGFC

- Developed in late 1950s and early 1960s
- Were thin porous wearing courses
- PMA was not used
- Produced at low temperatures (265 °F)
- Commonly referred to as "popcorn mix" because of appearance
- Used on interstates
- Significant premature failures due to weathering
- Stopped placement in 1982 due to failures

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Georgia's New Generation of OGFC Mixes Reevaluated and redesigned in 1992

- Polymer Modified AC was required
- Fibers were incorporated
- Hydrated Lime was added as anti-stripping agent
- Production temperature was increased
- Coarser gradations
- Increased lift thickness

12.5 mm PEM

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GDOT Policy on Use of OGFC

- Porous European Mix on all Interstates
- OGFC on State Routes with ADT ≥ 25,000 and which are not in reduced speed zone areas (not < 55 mph)

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Without OGFC


With OGFC

OGFC Construction

Lessons Learned

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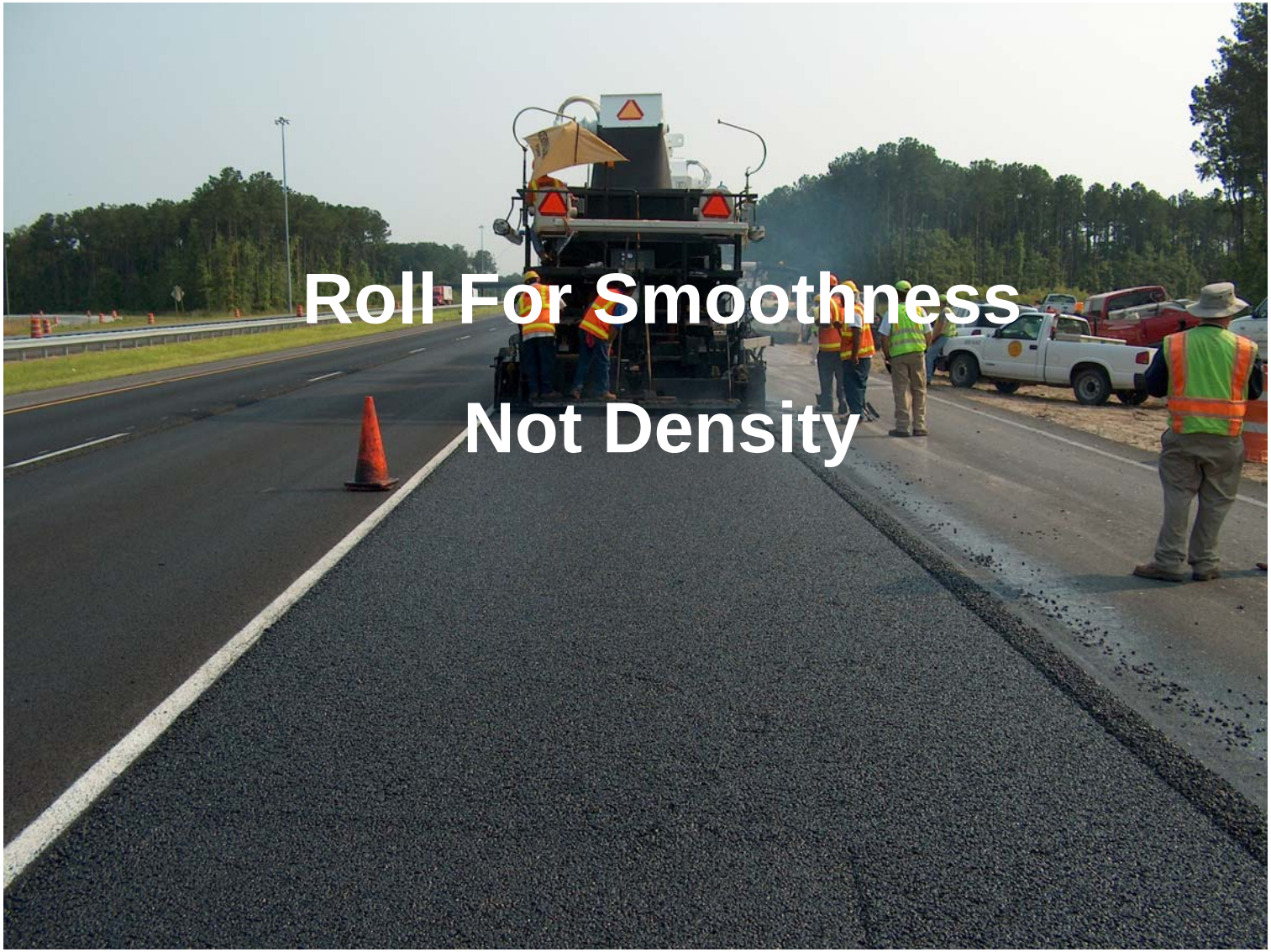

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Don’t Over Compact

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There is no substitute for good planning!

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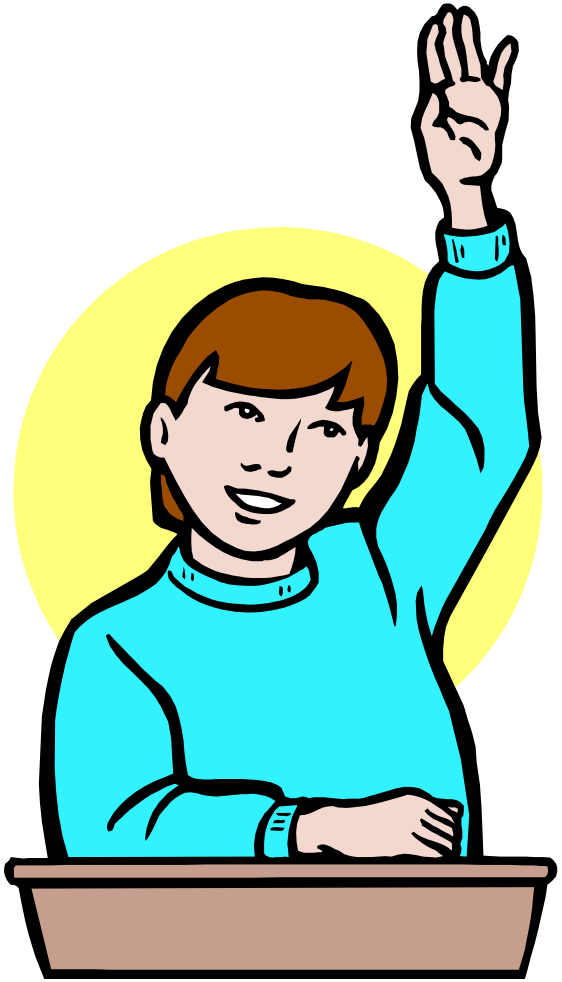
Questions?



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