

Paving Potpourri

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Agenda

- Why forensics
- Mixes for parking lots, driveways, etc.
- Tack
- Segregation of mix
- Density



Why Forensics?

- We don't have X-ray vision
- How thick is the HMA pavement
- What condition is the HMA pavement in
- How thickness of lifts
- Condition of base course
- Save time and money by limiting surprises



Surprises





Opportunities





Mix Recommendation for Parking Lots Trails, and Patching

- SPWEA430C
- Fine Mix
 - ¹/₂"
- High % Crushing
 - Help limit depressions
- Crack resistant
 - 3% air voids
 - More asphalt
- Think about Fog sealing to seal surface





Tack



"I suspect we lose 25% of our potential pavement life on about one-third to one-half of our bituminous pavement due to no bond," said Erland Lukanen, retired MnDOT engineer and pavement expert.









- Proper Sized Nozzles
- Correct Bar Height
- All Nozzles Angled the Same
- Use all nozzles
- Correct ground speed

Segregation

Segregation in a hot mix **asphalt** (HMA) mixture can be defined as the **separation** of the coarse aggregate particles in the mix from the rest of the mass.

But each type of **segregation** affects the long-term durability of the **asphalt pavement** concrete structure.



Segregation

- Allows water to infiltrate
- Makes density harder to achieve
- Shorten life of pavement



Truck Loading



Three Dumps, Front, Back, and Middle







Paver Caused









Auger Extensions



Compaction / Density why do I care?

Kentucky DOT research shows that increase density from 9% air voids to 7% can increase life of pavement by 25%.

WSDOT In-place density (air voids) strongly impact pavement performance. The general rule of-thumb is that a 1 percent increase in air voids over a base air void level of 7 percent tends to produce about a 10 percent loss in pavement life.



Factors that effect Density

- What's under the pavement
- Number of rollers
- Types of rollers
- Weight of rollers
- Temperature of the mix
- Aggregate Properties
- Mix design
- Binder grade
- Type of Joints
- Ambient temperature
- Wind, rain, snow

Need proper platform to pave on





Questions?

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THANK YOU

