

Literature Review Summary of Properties and Performance

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Moisture Susceptibility

- TSR
 - Typically lower ITS for WMA than HMA
 - Except Sasobit and sometimes Aspha-min
 - ITS improves with reheating
 - Sometimes helps TSRs sometimes not
- Hamburg
 - WMA stripping inflection point typically lower
 - Except Sasobit

Rutting

- Loaded Wheel Testers
 - APA and Hamburg (most wet)
 - WMA typically deeper rut depths than HMA
 - Except Sasobit

Other Mix Tests

- Dynamic Modulus
 - WMA typically less stiff except Sasobit
- Fatigue Testing
 - Lab mix: often WMA failed sooner
 - Plant mix: often HMA failed before WMA
- Low Temperature (CC&S and TSRST)
 - 1 project indicated substantially better
 - Most no substantial difference

PG

- Laboratory blended
 - Mostly Sasobit and Aspha-min
 - Most additives did not change binder grade
 - Except Sasobit
- WMA typically lower PG for recovered mix
 - Except Sasobit

Densities

- Densities often within spec
- When not in spec a construction issue was mentioned
- Better joint densities reported by some DOTs

Tensile Strengths of Cores

- WMA typically lower than HMA at time of construction
- WMA ITS dramatically changed in first two years
 - Looks more like HMA after two years in many cases

Recovered PG with Time

- Aging occurs
 - Many sites showed WMA aging faster than HMA
 - A few sites had the WMA not aging quickly

Field Rutting

- No substantial difference between HMA and WMA rutting
 - No reported cases of poor rutting at any of the demos

Cracking

- Cracking has been observed
 - If HMA cracked WMA is too
 - MO
 - CO
 - And others
- Sites where HMA not cracked WMA not cracked

Questions?