3340802 SUPERPAVE ASPHALT CONCRETE
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

Jim Warren
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Comments: (11-20-18, Internal)
1. Changes to 3340802 need more discussion prior to going forward. We have had several discussions with SMO and are ok with 334 in concept, but more needs to be done to address the issues relative to Lot definition in order to address stop and start small quantity urban paving, different lift thicknesses and differing base conditions all in the same LOT.

Response:

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Chadwick Daniels
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Comments: (12-4-18)
NCAT Test Track Findings from back in 2015 showed that 0.5% more of a modified binder (PG 76-22) did not have an effect on rutting performance even when there was low laboratory air voids. I have used this conclusion in the past to justify waiving EAR's due to low laboratory air voids while using PG 76-22. Just trying to achieve a higher density without increasing the lubricant/liquid asphalt in the mixes is not the answer. My point is that there is a direct relationship between roadway density and liquid asphalt contents. If there is no reduction in rutting performance then it is only logical to increase liquid contents while using modified binders. I do not believe that there is any data out there that will say that higher density is not better. It is clear that higher in place density is better but requiring it without allowing for some other changes in the mixes is not feasible in my opinion.

Response:

Comments: (12-21-18)
ACAF recognizing the importance to density in the long term performance of asphalt mixes. In fact, performance has increased over the last 18 years in part due to switching to Superpave and % of Gmm as roadway targets instead of control strip density. There are a few concerns with the proposed change that will be laid out in this comment and also some suggestions.

1. The 10% jump in PF for density may have more an impact to the contractor than the FDOT estimates.
Recommendation: 1. Consider a phased-in density change over a year or two. Maybe start with a 5% change, with reducing AV PF by 5% and increasing density PF 5%.

Response:

2. The minimum thickness for SP 9.5 is still less than the industry recommendation for density to be 3-4 times the maximum nominal aggregate size. Increasing the minimum thickness would bring this inline with nationally recognized standards.
Recommendation: Set the minimum lift thickness in 334 for 9.5mm to 1-1/4 inches for density testing areas. If the DOT wants to use it as 1 inch, eliminate the PWL density requirement and proceed with a refusal density testing with non-destructive density gauges.

Response:

3. Many other states are lowering target design air voids either by regression or other means, including Balanced Mix Design techniques, to increase density and durability of mixes.
Recommendation: Lower the target design air void level to 3.5% from 4%.

Response:

4. Some in industry have expressed concerns about binder variability and its effect on construction.
Recommendation: Publish all binder test results including supplier and DOT tests. Consider revising the frequency of supplier QC tests based on previous test result variability

Response:

5. Increasing the upper limit on the specification is a positive move, but some states with PWL specifications have raised the limit even higher or removed the upper limit completely. It is entirely possible that the PWL for density is forcing lower roadway density rather than encouraging higher roadway density.
Recommendation: Increase the maximum spec limit for density to plus 4% and consider revisiting how density is paid for in future discussion.

Response:

6. By trying to minimize the number of mixes used on a project for an administrative purpose, we are finding a mix being used in multiple locations and lifts and base conditions combined in the same density SubLot/LOT. There are issues with this from a statistical theory basis that need to be resolved. Since the compaction effort must vary on different lift thicknesses and different bases, trying to achieve a target AND maintain tight uniformity is very difficult to do and isn't correct procedure.
Recommendation: Separate out into separate lots mix placed in different thicknesses or different areas.

Response:

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Keith Sloane
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Comments: (12-4-18)

By eliminating the upper pay factor limit the contractor will put more effort into density. Currently they are trying to juggle good density within an upper and lower limit. If the goal is to improve density/ by increasing the average density above 92% then this can be achieved by just removing the upper limit period. putting more weight on the pay factor and taking it away from other key components isn't beneficial. Contractors want to get density but, want the maximum pay factor. by removing the upper pat factor limit the contractor will naturally get more density to eliminate the possibility of low density penalty with no risk of a high density penalty.

Response:

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Ronda S. Daniell
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Comments: (12-18-18)
334-8.3: It is some opinions if we are going make density 45% of the contractors pay we should include additional oversite on the coring process, labeling of the cores & testing.

Response:

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Ponch Frank
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Comments: (12-20-18)
We understand that the research done here by SMO and abroad at NCAT, along with others research indicates that an increase in density should provide longer last pavement. As such, we believe this proposed change in the incentive through the CPF is a very logical, reasonable and fair way to encourage asphalt contractors to put more attention to achieving densities. Increasing the target density would be a mistake and we believe that with this tweak to the CPF contractors will adapt to FDOT's request of industry to raise the densities.

Response:

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