3340203 SUPERPAVE ASPHALT CONCRETE
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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Comments: (Internal 6-8-20)

I spoke too soon, please ignore my previous email (sic) No Comments. Rich Hewitt prepared some comments on this spec revision and they are attached for your consideration. Thanks.

SUBARTICLE 334-2.3 is expanded by the following:

334-2.3.6 Allowable RAP Percentages for Type SP Structural Mixtures with PG 76-22 Asphalt Binder: For Type SP structural mixtures using PG 76-22 asphalt binder, select the percentage of RAP material based on Table 334-3.

Table 334-3

Allowable RAP Percentages[1] in Type SP Structural Mixtures with PG 76-22 Asphalt Binder

		Coarse RAP	Intermediate RAP	Fine RAP
Gradation[2] ~~% Passing #16 Sieve~~[2] ~~% Passing #16 Sieve~~		~~Coarse RAP~~ ≤ 40%	~~Intermediate RAP~~ > 40% to ≤ 50%	~~Fine RAP~~ > 50%
PG_{HT}[3] > 100.0° C	Allowable RAP Percentage	≤ 25%	≤ 20%	≤ 20%
PG_{HT}[3] ≤ 100.0° C		≤ 30%	≤ 25%	

Notes:

1. RAP aggregate by weight of total aggregate or RAP binder by weight of total binder.
2. RAP gradations based on ignition oven extraction of RAP material in accordance with FM 5-563.
3. PG_{HT}: asphalt binder high temperature continuous performance grade of RAP in accordance with Section 916.

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Commented [R1]: Worked with Wayne Rilko in attempt to clarify the table a little.

SUBARTICLE 334-3.2.1 is deleted and the following substituted:

334-3.2 Mix Design:

334-3.2.1 General: Design the asphalt mixture in accordance with AASHTO R 35-17~~2~~, except as noted herein. Prior to the production of any asphalt mixture, submit the proposed mix design with supporting test data indicating compliance with all mix

(Page break included to show Subarticle name for comments below.)

design criteria to the Engineer. For all mix designs, include representative samples of all component materials, including asphalt binder. Allow the Director of the Office of Materials a maximum of four weeks to either conditionally verify or reject the mix as designed.

For a Traffic Level A mixture, meet the mix design criteria for a Traffic Level B mixture and for a Traffic Level D mixture meet the mix design criteria for a Traffic Level E mixture.

Commented [R2]: Separated the mix design direction as a separate paragraph.

At no additional cost to the Department, for ~~A~~In addition, a Type SP mix ~~one traffic level higher than the traffic level specified in the Contract Documents may be substituted, at no cost to the Department.~~ In addition~~Based on the previous conditions,~~ the following Traffic Level substitutions are allowed:

Traffic Level E can be substituted for Traffic Level D.
Traffic Level D or E can be substituted for Traffic Level C.
Traffic Level C can be substituted for Traffic Level B.
Traffic Level B or C can be substituted for Traffic Level A.

Commented [R3]: Deleted text on substitutions and kept list that combines substitutions that are allowed based on language in this paragraph and the result of the mix design direction provided in the previous paragraph.

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Commented [R4]: Leave this simple to understand explanation of the allowable Traffic Level substitutions.

The same traffic level and binder type that is used for the mainline traffic lanes may be placed in the shoulder at no additional cost to the Department, even if the conditions stated above are not met for the shoulder.

Do not use more than four mix designs per nominal maximum aggregate size per traffic level per binder grade per year, where the year starts at the Notice to Proceed. Exceeding this limitation will result in a maximum Composite Pay Factor (CPF) of 1.00 as defined in 334-8.2 for all designs used beyond this limit.

Warm mix technologies (additives, foaming techniques, etc.) listed on the Department's website may be used in the production of the mix. The URL for obtaining this information, if available, is: https://www.fdot.gov/materials/mac/production/warmmixasphalt/.

SUBARTICLE 334-5.1.2 is deleted and the following substituted:

334-5.1.2 Acceptance Testing Exceptions: When the total combined quantity of hot mix asphalt for the project, as indicated in the Plans for Type B-12.5, Type SP and Type FC mixtures only, is less than 2000 tons, the Engineer will accept the mix on the basis of visual inspection. The Engineer may require the Contractor to run process control tests for informational purposes, as defined in 334-4, or may run independent verification tests to determine the acceptability of the material.

Density testing for acceptance will not be performed on widening strips or shoulders with a width of 5 feet or less, open-graded friction courses, variable thickness overbuild courses, leveling courses, any SP-9.5 or SP-12.5 asphalt layer placed on subgrade with a layer thickness less than or equal to 3 inches, ~~except if the layer thickness is greater than 3 inches or is a Type SP-19.0 mixture (regardless of thickness type),~~ miscellaneous asphalt pavement, shared use paths, crossovers, gore areas, or any course with a specified thickness less than 1 inch or a specified spread rate that converts to less than 1 inch as described in 334-1.4. Density testing for acceptance will not be performed on asphalt courses placed on bridge decks or approach slabs; compact these courses in static mode only per the requirements of 330-7.7. In

Commented [R5]: Proposed language has exceptions to the density testing exceptions. In other words, an exception to the exceptions. This is akin to a double negative. As such, I recommend clearly stating what the actual exception is. I provided some potential language attempting to do so.

SUBARTICLE 334-5.7.1 is expanded by the following:

334-5.7.1.1 Asphalt Binder and Mixture Sampling for Determination of Asphalt Binder Quality: At the Department's request, ~~O~~obtain an asphalt binder sample from the asphalt plant storage tank and a corresponding asphalt mixture sample ~~utilizing~~using binder from the same storage tank ~~at the request of the Department~~. Samples of asphalt binder and mixture ~~should~~shall be sampled the same day. The asphalt binder from the storage tank and the asphalt binder recovered from the asphalt mixture will be tested by the Department for compliance with Contract Documents. The Department will request additional samples if the quality of the binder does not meet Contract requirements. Binder test results that do not meet Contract requirements will be handled in accordance with Materials Manual Section 3.5.8.3.1, Volume II.

Commented [R6]: Replaced "utilizing" with "using".

Commented [R7]: Moved, "At the request of the Department" to the beginning of the sentence.
As written, one might misconstrue the "at the request of the Department" only applies to the binder sample from the asphalt mixture.
Although there may not be any real consequence of that potential misinterpretation, I prefer the clearest language possible.

Commented [R8]: Changed "should" to "shall".

Commented [R9]: Added language to speak to what happens if test results do not meet Contract requirements. To avoid the sample, test, fail, resample loop that appeared to be created.

SUBARTICLE 334-5.7.2 is deleted and the following substituted:

334-5.7.2 Roadway: Obtain five 6 inch diameter roadway cores within 24 hours of placement, as directed by the Engineer, for IV testing. In situations where it is impractical to cut five cores per sublot, obtain a minimum of three cores per sublot at random locations, as identified by the Engineer. These independent cores will be obtained from the same LOTs and sublots as the Independent Verification Plant samples, or as directed by the Engineer. The density of these cores will be obtained as described in 334-5.1.1. If the average of the results for the sublot does not meet the requirements of Table 334-64 for density, then a comparison of the IV G_{mm} test results and the Contractor's G_{mm} test results, if available, will be made in accordance with the procedure provided in 334-5.7.1. Address any material represented by the failing test results in accordance with 334-5.9.5.

Response: (Wayne Rilko) Revisions to 334-2.3.6, 334-3.2.1, and 334-5.1.2 are as shown in the comments above. Subsequent discussions with Rich Hewitt led to the deletion of the last two proposed sentences in 334-5.7.1

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Comments: (Industry 6-9-20)
334-5.1.2 the word "side roads" needs to be added after "ramps" to the areas not requiring density if less than 500 feet in length. Also, some clarification on what is meant by "Do not perform density testing for acceptance in situations where the areas requiring density testing is less than 50 tons within a sublot." It appears that it is meant to be associated with non density areas but has been interpreted to mean that if you go over 50 tons and have pulled 5 or 6 side

roads or turn outs and the total is more than 50 tons then they will cut cores and include in CPF calculations. There is no way to establish a rolling pattern for this situation. The next paragraph describing an intersection as the area inside of stop bars for both mainline and sideroads further complicates how sideroads are addressed.
334-5.7.1 The last sentence of that paragraph that was added to require an EAR needs to be struck. Under the current spec, if the FDOT test can't be corroborated with the PC sample, the IV is determined to be invalid. This throws it back to requiring an EAR anyways.
Response: (Wayne Rilko)
334-5.1.2
These concerns were not brought forward by Industry during the preliminary specification revision review. These topics will be discussed with Industry and addressed during the next round of specification revisions. The conversation should include what to do if a random acceptance core falls in one of these areas and how to determine if a minimum density in these areas was achieved.
It is recognized that side roads and turnouts require rolling patterns which differ from those used on the mainline. However, these areas need density. Side streets vary in traffic volume. They can range from a heavily traveled state or county road to an entrance into a small subdivision. The same is true for turnouts. In either case, these areas are often in the FDOT right-of-way and must be properly constructed.
334-5.7.1
This scenario does not happen often. However, when three separate tests on a split sample, two performed by the Department and one performed by the Contractor, all fail but do not compare, the most likely cause is improper sampling, which is performed by the Contractor. The concern is to determine if a premature failure will occur by requiring an evaluation of the material.