Florida Department of TRANSPORTATION

Specifications Update

Flexible Pavement Committee
July 20, 2023

Greg Sholar

Florida Department of
TRANSPORTATION

July 2021

Section 334

Density Specification Limits

Specification Limits	
Quality Characteristic	Specification Limits
Passing No. 8 sieve (percent)	Target ± 3.1
Passing No. 200 sieve (percent)	Target ± 1.0
Asphalt Content (percent)	Target ± 0.40
Air Voids (percent)	4.00 ± 1.20
Density, vibratory mode (percent of G_{mm}):	93.00 + ~~3.00~~ 4.00, - 1.20
Density, static mode (percent of G_{mm}):	92.00 + ~~4.00~~ 5.00, - 1.50 (1)
(1): No vibratory mode in the vertical direction will be allowed. Other vibratory modes will be allowed, if approved by the Engineer.	

Florida Department of TRANSPORTATION

January 2022

Section 300

Tack Coat Application Rates

Tack Coat Application Rates		
Asphalt Mixture Type	**Underlying Pavement Surface**	**Target Tack Rate (gal/yd^2)[1]**
Base Course, Structural Course, Dense-Graded Friction Course, Open-Graded Friction Course	Newly Constructed Asphalt Layers	0.06
	Milled Asphalt Pavement Surface, Oxidized and Cracked Asphalt Pavement, Concrete Pavement	0.09
Note 1: Target tack application rates greater than those specified may be used upon approval of the Engineer.		

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January 2022
Section 334
Eliminated TL-A and TL-D.

Gyratory Compaction Requirements	
Traffic Level	N_{design} Number of Gyrations
~~A~~	~~50~~
B	65
C	75
~~D~~	~~100~~
E	100

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January 2022

Section 916

Tack Sampling

- **Sample tack from the distributor, once per project per product. Tested by the Department.**
- **Failing test results may result in:**
  - **Tack not to be used on Department projects.**
  - **May require bond strength testing (min 80 psi).**

Florida Department of TRANSPORTATION

June 2022

Materials Bulletin 22-03

Allow more RAP in structural mixes

Table 334-3 Allowable RAP Percentages[1] in Type SP Structural Mixtures with PG 76-22 Asphalt Binder				
Gradation[2] % Passing #16 Sieve		Coarse RAP ≤ 40%	Intermediate RAP > 40% to ≤ 50%	Fine RAP > 50%
PG_{HT}[3] > 100.0° C	Allowable RAP Percentage	≤ 40%	≤ 25%	≤ 25%
PG_{HT}[3] ≤ 100.0° C		≤ 45%	≤ 35%	
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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July 2022

Section 320

Maximum temperature for mix and binder is 355°F.

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Section 334

Defective Material

Any additional PC samples obtained in the same work shift after an IV sample has been obtained shall include enough material for three complete sets of tests (PC, IV and IV check samples) in the event the Contractor requests using the PC test results for engineering analysis or delineation. These additional PC samples must compare with verified IV test results as determined by the comparison process of 334-5.7.1 in order to be used for engineering analysis or delineation.

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July 2022

Section 337

Added 1.05 pay factor for small quantity LOTS of open-graded friction course (FC-5), i.e. one or two sublots.

See next slide.

Small Quantity Pay Table for FC-5		
Pay Factor	1-Test Deviation	2-Test Average Deviation
Asphalt Binder Content (%)		
1.05	0.00-0.25	0.00-0.18
1.00	0.26-0.50	0.19-0.35
0.90	0.51-0.60	0.36-0.42
0.80	>0.60	>0.42
3/8 inch Sieve (%)		
1.05	0.00-3.25	0.00-2.30
1.00	3.26-6.50	2.31-4.60
0.90	6.51-7.50	4.61-5.30
0.80	>7.50	>5.30
No. 4 Sieve (%)		
1.05	0.00-2.50	0.00-1.77
1.00	2.51-5.00	1.78-3.54
0.90	5.01-6.00	3.55-4.24
0.80	>6.00	>4.24
No. 8 Sieve (%)		
1.05	0.00-1.50	0.00-1.06
1.00	1.51-3.00	1.07-2.12
0.90	3.01-3.50	2.13-2.47
0.80	>3.50	>2.47

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Section 334

1. SP-9.5 mixtures now allowed in TL-E roadways, if 1.5” layer thickness.

2. QC high air void failures can now be delineated.

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Section 337

Table 337-2 FC-5 Percent Binder Content	
Aggregate Type	Percent Binder Content
Crushed Granite and/or Granitic Gneiss	~~5.5~~6.0 - 7.5
Crushed Limestone and/or Shell Rock	~~6.0~~6.5 - 8.0

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Section 337

337-4.2 FC-9.5 and FC-12.5: Provide a mix design conforming to the requirements of 334-3.2 unless otherwise designated in the plans. **Where the plans call for an FC-12.5, an FC-9.5 may be substituted for the FC-12.5 at no additional cost provided the thickness requirements of 334-1.4.1 are met.**

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Section 916

916-3.2 Requirements: Use a prime coat meeting the requirements of AASHTO M 140 for anionic emulsions, AASHTO M 208 or AASHTO M 316 for cationic emulsions, or as specified in the Producer's QC Plan. For anionic emulsions, the cement mixing test will be waived. For tack products, the minimum testing requirements shall include percent residue, naphtha content (as needed), one-day storage stability, sieve test, Saybolt Furol viscosity, original DSR, **re-emulsification (FM 5-624)**, and solubility (on an annual basis). Residue testing shall be performed on residue obtained from distillation, AASHTO T 59 or low-temperature evaporation (AASHTO R 78).

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Section 234

Now can use SP-9.5, SP-12.5, or SP-19.0 (TL-B, C, or E) where asphalt base mix is called for.

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Section 300

Contractor may elect to not apply bituminous prime coat on previously prepared bases or exposed bases when an asphalt lift is placed within 24 hours of final preparation of such bases. Ensure base moisture content is within acceptable range. Ensure finished base is protected from rain and is bonded adequately to the new lift of asphalt pavement. Full depth reclamation and cement stabilized bases must always be primed.

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Section 334

Allows APA testing for failing FAA.

334-3.2.3.2 Fine Aggregate Angularity: When tested in accordance with AASHTO T 304, Method A, meet the uncompacted void content of fine aggregate specified in AASHTO M 323. For Traffic Level C and E base and structural course mixtures, a fine aggregate angularity value less than 45.0 and greater than or equal to 42.0 is allowable provided testing parameters of AASHTO T 340-10 (2019) meet the following requirements:

1. Rutting tests are performed on two gyratory specimens compacted to N_{des} level of gyrations with a height of 115 ± 5 mm and a diameter of 150 mm.
2. The air void (AV) content of each gyratory specimen after compacting to N_{des} shall be within the following range: $3.0 \leq AV \leq 4.8$.
3. Rutting tests are performed at 64.0 C.
4. The average rut depth for two specimens shall not exceed 4.5 mm.

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Section 337

Changes how friction aggregates are shown in the spec.

Table 337-1 Friction Aggregate Classification			
Classification	Minimum percentage of approved friction course aggregates for FC-5 mixtures	Minimum percentage of approved friction course aggregates for FC-9.5 and FC-12.5 mixtures	Percentage of hydrated lime required in FC-5 mixtures
A	100	100	0
B	100	60	1.0
C	100	60	1.5

Comments/Questions?