

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE Maintenance Guidelines **OFFICE** Materials and Testing
Forest Park, Georgia
DATE October 10, 2018

FROM 
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TO Meg Pirkle, P.E., Chief Engineer

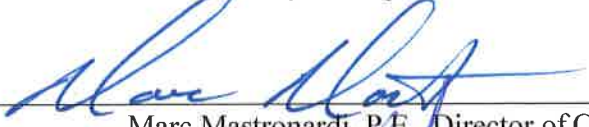
SUBJECT Guidelines for Capital Maintenance Projects

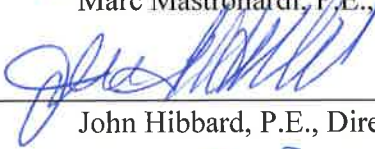
Attached for your information and routing for approval are criteria and guidelines for capital maintenance projects. All Office of Materials and Testing (OMAT) recommendations have been incorporated into the attached documents dated October 10, 2018, which are effective immediately.

If you have any questions, please contact Peter Wu at (404) 608-4840 or J.T. Rabun at (404) 608-4740.

MLF:PW:JTR:SH:IR:sjw

Attachments: Use of Asphaltic Concrete Layer and Mix Types for Capital Maintenance Projects
Guidelines for Use of Crack Mitigation Application for Capital Maintenance Projects
Guidelines for Resurfacing Using Surface Treatment for Capital Maintenance Projects
Guidelines for Milling for Capital Maintenance Projects

Concurs: 
Marc Mastronardi, P.E., Director of Construction

Recommends: 
John Hibbard, P.E., Director of Permits and Operations

Approves: 
Meg Pirkle, P.E., Chief Engineer

**USE OF ASPHALTIC CONCRETE LAYER AND MIX TYPES FOR CAPITAL MAINTENANCE
PROJECTS (Use Base Year Two-Way ADT and ADTT)**

	PAY ITEM	TWO-WAY AVERAGE DAILY TRAFFIC (ADT)	MAXIMUM TWO-WAY AVERAGE DAILY TRUCK TRAFFIC (ADTT)	MIX TYPE	LAYER THICKNESS AND/OR SPREAD RATE Customary, (Metric)			REMARKS
					(Minimum)	USE	(Maximum)	
Drainage	400-3206	>25,000	N/A	12.5 mm OGFC	85 lbs/yd ² , (46 kg/m ²)	100 lbs/yd ² , (54 kg/m ²)	110 lbs/yd ² , (60 kg/m ²)	For Interstate Routes. For High ADT State Routes with speed limits ≥ 55 mph only when recommended by the Office of Materials and Testing (OMAT).
	402-3814	<800	100	4.75 mm	3/4", (19 mm, 46 kg/m ²)	1", (25 mm, 60 kg/m ²)	1-1/8", (29 mm, 68 kg/m ²)	For State and Off-system Routes.
	402-3816	800 to 2,000	100		85 lbs/yd ² , (19 mm, 46 kg/m ²)	110 lbs/yd ² , (25 mm, 60 kg/m ²)	125 lbs/yd ² , (29 mm, 68 kg/m ²)	
Surface**	402-3818	2,000 to 6,000	600	4.75 mm w/ Polymer Modified AC	3/4", (19 mm, 46 kg/m ²)	1", (25 mm, 60 kg/m ²)	1-1/8", (29 mm, 68 kg/m ²)	For State and Off-system Routes.
	402-3103	6,000 to 10,000	1,000	9.5 mm Type II Superpave	1-1/8", (29 mm, 68 kg/m ²)	1-1/4", (32 mm, 73 kg/m ²)	1-1/2", (38 mm, 90 kg/m ²)	For State and Off-system Routes.
	402-3130	10,000 to 25,000	2,500	12.5 mm Superpave	1-3/8", (35 mm, 81 kg/m ²)	1-1/2", (38 mm, 90 kg/m ²)	2-1/2", (64 mm, 149 kg/m ²)	For State Routes and for shoulders of Interstate Routes.
	402-4510	25,000 to 50,000	N/A	12.5 mm Superpave w/ Polymer Modified AC	1-3/8", (35 mm, 81 kg/m ²)	1-1/2", (38 mm, 90 kg/m ²)	2-1/2", (64 mm, 149 kg/m ²)	For high ADT State Routes, Interstate Routes when recommended by OMAT, all flexible pavement Interstate Ramps, and all flexible pavement roundabouts.
	402-3600	>50,000	N/A	12.5 mm SMA	1-3/8", (35 mm, 81 kg/m ²)	1-1/2", (38 mm, 90 kg/m ²)	3", (75 mm, 180 kg/m ²)	For Interstate Routes and for State Routes when recommended by OMAT. OMAT may recommend 2-inch lift 12.5 mm SMA on Interstates.
Intermediate	402-3190	N/A	N/A	19 mm Superpave	1-3/4", (44 mm, 103 kg/m ²)	2", (50 mm, 120 kg/m ²)	3", (75 mm, 180 kg/m ²)	All routes. 2 inches is optimum for smoothness. If additional structure of greater than 3" is required, use 25 mm Superpave. Trench widening Thickness = 6", 660 lbs/yd ² , (150 mm, 360 kg/m ²)
	402-3121	N/A	N/A	25 mm Superpave	3", (75 mm, 180 kg/m ²)	3", (75 mm, 180 kg/m ²)	5", (125 mm, 300 kg/m ²)	All routes. 3 or 4 inches is a standard lift thickness. Trench widening Thickness = 6", 660 lbs/yd ² , (150 mm, 360 kg/m ²)

Note: Mix type to be used for patching and leveling will depend on thickness to be placed according to Section 400.3.03.B.4, Table 3 in Shelf Special Provision.

**Use of the shown pay items will comply with GDOT Policy 5520-8 in relation to the allowed aggregate Group/Blend for friction and ADT.

USE OF ASPHALTIC CONCRETE LAYER AND MIX TYPES FOR CAPITAL MAINTENANCE PROJECTS (Use Base Year Two-Way ADT and ADTT)

Mixes Used on an Infrequent Basis (Contact OMAT for Guidance before using)

PAY ITEM	Two-Way ADT	Maximum Two-Way ADTT	MIX TYPE	LAYER THICKNESS AND/OR SPREAD RATE		REMARKS
				USE (Minimum)	USE (Maximum)	
400-3150	N/A	N/A	9.5 mm OGFC	55 lbs/yd ² , (30 kg/m ²)	60 lbs/yd ² , (33 kg/m ²)	Limited use on State Routes to address specific drainage problems and for High ADT State Routes with speed limits 55 mph only when recommended by OMAT.
400-3624	N/A	N/A	12.5 mm PEM	110 lbs/yd ² , (60 kg/m ²)	135 lbs/yd ² , (73 kg/m ²)	For Interstate Routes when recommended by OMAT.
402-3100	<800	N/A	9.5 mm Type I Superpave	7/8", 90 lbs/yd ² , (22 mm, 49 kg/m ²)	1-1/4", 135 lbs/yd ² , (32 mm, 73 kg/m ²)	For use on Off-System Routes. *For Off-system Routes only USE: 1-1/8", 125 lbs/yd ² , (29 mm, 68 kg/m ²) For use in parking lot construction. For use on State Routes only when recommended by OMAT.
402-3101	800 to 2,000	N/A				
402-4506	N/A	N/A	9.5 mm Type II Superpave w/ Polymer Modified AC	7/8", 90 lbs/yd ² , (22 mm, 49 kg/m ²)	1-1/4", 135 lbs/yd ² , (32 mm, 73 kg/m ²)	Only when recommended by OMAT.
402-3575	10,000 to 50,000	N/A	9.5 mm SMA	1-1/8", 125 lbs/yd ² , (29 mm, 68 kg/m ²)	1-1/2", 165 lbs/yd ² , (38 mm, 90 kg/m ²)	May be used as alternate surface on State Routes <i>only</i> when recommended by OMAT.
402-4610	N/A	N/A	12.5 mm Superpave w/ Highly Polymer Modified AC	1-3/8", 150 lbs/yd ² , (35 mm, 81 kg/m ²)	2-1/2", 275 lbs/yd ² , (64 mm, 149 kg/m ²)	May be used as alternate surface <i>only</i> when recommended by OMAT.
402-4514	N/A	N/A	19 mm Superpave w/ Polymer Modified AC	1-3/4", 190 lbs/yd ² , (44 mm, 103 kg/m ²)	2", 220 lbs/yd ² , (50 mm, 120 kg/m ²)	Only when recommended by OMAT.
402-3606	N/A	N/A	19 mm SMA	1-3/4", 190 lbs/yd ² , (44 mm, 103 kg/m ²)	2", 220 lbs/yd ² , (50 mm, 120 kg/m ²)	Only for special circumstances i.e. composite pavement, with concurrence of OMAT.

Note: Mix type to be used for patching and leveling will depend on thickness to be placed according to Section 400.3.03.B.4, Table 3 in Shelf Special Provision.
**Use of the shown pay items for Surface mixes will comply with GDOT Policy 5520-8 in relation to the allowed aggregate Group/Blend for friction and ADT.

GUIDELINES FOR USE OF CRACK MITIGATION APPLICATION FOR CAPITAL MAINTENANCE PROJECTS (Use Base Year Two-Way ADT and ADTT)

PAY ITEM	TWO-WAY AVERAGE DAILY TRAFFIC (ADT)	MAXIMUM TWO-WAY AVERAGE DAILY TRUCK TRAFFIC (ADTT)	APPLICATION	LAYER THICKNESS AND/OR SPREAD RATE Customary, (Metric)	RECOMMENDED USE BASED ON ROADWAY/ENVIRONMENT CONDITION
415-5000	No Limit	N/A	Open Graded Crack Relief Interlayer Group 2 Only (OGI)	1" Compacted, (25 mm Compacted)	Urban, city, business district and higher volume roadways. When milling is required. Routes with multiple intersections. Early and late paving season nighttime operations. When same day final wearing surface overlay is required.
424-5107	No Limit	N/A	Single Surface Treatment, Stone Size 7, Group 2 Only	Single Layer	Rural roadways and/or airports Locations where traffic control/lane closures can be placed over longer linear distances. Leveling course shall be applied prior to traffic control/ lane closures.
402-1812*	N/A	N/A	Asphaltic Concrete Leveling Course	3/4", 85 lbs/yd ² , (19 mm, 46 kg/m ²)	When roadway grade ≤10%.
424-5007**	No Limit	N/A	Single Surface Treatment, Stone Size 7, Group 1 or 2	Single Layer	Rural roadways and/or airports Locations where traffic control/lane closures can be placed over longer linear distances. Leveling course shall be applied prior to traffic control/lane closures.
402-1812*	N/A	N/A	Asphaltic Concrete Leveling Course	3/4", 85 lbs/yd ² , (19 mm, 46 kg/m ²)	When roadway grade ≤10%
424-5090**	< 2,500	N/A	Single Surface Treatment, Stone Size 89, Group 2 Only	Single Layer	Rural low volume roadways and/or airports with minor cracking Strip Sealing When leveling is not specified Scrub Seal applications. Locations where traffic control/lane closures can be placed over longer linear distances. Leveling course shall be applied prior to traffic control/ lane closures.

Note: Do not use OGI nor surface treatment in curb & gutter sections due to possibly trapping water.
 *Leveling as required prior to opening to traffic when placing single surface treatment, size #7 stone.
 **Pay item only to be used when specified by the Office of Maintenance.

GUIDELINES FOR RESURFACING USING SURFACE TREATMENT FOR CAPITAL MAINTENANCE PROJECTS (Use Base Year Two-Way ADT and ADTT)

PAY ITEM	TWO-WAY AVERAGE DAILY TRAFFIC (ADT)	MAXIMUM TWO-WAY AVERAGE DAILY TRUCK TRAFFIC (ADTT)	MIX TYPE	LAYER THICKNESS AND/OR SPREAD RATE Customary, (Metric)	REMARKS
424-5090	≤ 2,000	≤ 150	Single Surface Treatment, Stone Size 89, Group 2 Only	Single Layer	No measurable rutting.
424-6189	≤ 3,000	≤ 200	Double Surface Treatment, Stone Size 7 and 89, Group 2 Only	Double Layer	Rutting must be less than 1/2"
402-1812*	N/A	N/A	Asphaltic Concrete Leveling Course	1/2", 55 lbs/yd ² , (13 mm, 30 kg/m ²)	
424-6201	≤ 2,750	≤ 200	Double Surface Treatment Stone Size 7 and 89 w/ Sand Seal W10, Group 2 Only	Double Layer	Rutting must be less than 1/2". Because of the amount of bituminous material used in this surface treatment application, it is recommended that the final bituminous tack coat placed prior to the sand coat be applied near the lower rate of the specified application range of 0.10 - 0.25 gal/yd ² . Additionally, it is recommended that these projects be closely monitored to ascertain whether additional consideration needs be given to project selection and/or specification changes.
402-1812*	N/A	N/A	Asphaltic Concrete Leveling Course	1/2", 55 lbs/yd ² , (13 mm, 30 kg/m ²)	

Note: *Provide plant produced HMA leveling to correct rutting < 1/2 inch prior to placing surface treatment on State route resurfacing projects. Consideration should be given to the use of strip leveling when wheel path rut measurements average near the 1/2 inch level.

Pave a minimum of 500 feet approaching any intersection controlled by a stop sign or traffic light with 135 lbs/yd² of 9.5 mm Superpave mix to minimize flushing of bituminous surface treatment in these areas. Use the same mix to pave side road radiuses and driveway aprons to minimize flushing in these areas.

Micro-milling should be used for any double surface treatment projects requiring milling. It is also recommended that the micro-milled surface be exposed to traffic for a minimum of 24 hours to assist in dust removal prior placing surface treatment.

GUIDELINES FOR MILLING FOR CAPITAL MAINTENANCE PROJECTS

PAY ITEM	MILLING TYPE	SPECIFICATION/ SPECIAL PROVISION	OPEN TO TRAFFIC MINIMUM REQUIREMENT	OPEN TO TRAFFIC RECOMMENDED ALLOWED TIME	TO BE INCLUDED IN GENERAL NOTES
432-0350	Micro-milling	Special Provision 432	24 Hours	5 Days	Prior to opening to traffic, the micro-milled roadway is to be thoroughly cleaned using brooms, sweepers, and/or vacuum trucks. The minimum 24 hour requirement is to allow traffic to assist in the removal of any dust remaining after the cleaning process. The micro-milled surface must comply with specified requirements of Special Provision 432.
Various	Conventional Milling	Standard Specification 432	See Notes	Up to 5 Days	If traffic is to be maintained on the milled surface prior to the placement of new asphalt, provide suitable transitions between areas of varying thickness to create a smooth longitudinal riding surface. Produce a pattern of striations that will provide an acceptable riding surface. Prior to opening to traffic, the milled roadway shall be thoroughly cleaned using brooms, sweepers, and/or vacuum trucks. Conventional milled roadways must comply with the requirements of Standard Specification 432.