

2011 ODOT MIX LAB ROUND ROBIN

	Sample No.	Sample No.	Sample No.	Sample No.	Sample No.	Sample No.	Sample No.
ASPHALT CONTENT: ODOT SS-1038	1	3	4	5	6	7	9
Sample Mass, assume moisture free (nearest 0.1 g): for informational purposes only..... (1)	2450.8	2606.1	2545.3	1308.1	2583.5	2298.3	2587.4
Percent Asphalt (nearest 0.01 percent): (2)	5.34	5.34	5.21	5.27	5.21	5.55	5.26
F/A Ratio: (3)	1.09	1.25	1.23	1.21	1.27	1.24	1.17
F-T Value: (4)	-2	-3	-3	N/A	-3	-3	-3
MECHANICAL ANALYSIS: Per Method AASHTO- T30							
Washing Method? Manual , Mechanical Washing Apparatus If Mechanical, Time for Wash? _____ (minutes)							
Mass removed by washing over 75-µm (No. 200) sieve (nearest 0.1 g): <i>informational purposes only</i> (5)	110	NoWash		4.4	NoWash	137.9	NoWash
REPORT THE TOTAL PERCENT PASSING EACH SIEVE:							
Total material passing the 12.5-mm (½ in.) sieve (nearest 0.1 percent)..... (6)	99.9	99.6	100	99.8	99.8	99.7	100
Total material passing the 9.5-mm (3/8 in.) sieve (nearest 0.1 percent)..... (7)	95.1	93.8	96.1	95.8	93.9	95.1	94.6
Total material passing the 4.75-mm (No. 4) sieve (nearest 0.1 percent)..... (8)	63.3	64.5	65.2	64.4	61.1	61.8	62.1
Total material passing the 2.36-mm (No. 8) sieve (nearest 0.1 percent)..... (9)	41	42.1	42.7	41.3	39.6	40.2	39.8
Total material passing the 1.18-mm (No. 16) sieve (nearest 0.1 percent)..... (10)	25.3	26.5	26.4	25.8	25.5	26	25.4
Total material passing the 600-µm (No. 30) sieve (nearest 0.1 percent)..... (11)	17.6	18.4	18.2	17.9	17.9	18.4	17.8
Total material passing the 300-µm (No. 50) sieve (nearest 0.1 percent)..... (12)	12.4	13.2	12.8	13	12.8	13.3	12.7
Total material passing the 150-µm (No. 100) sieve (nearest 0.1 percent)..... (13)	8.9	9.7	9.4	9.6	9.4	9.9	9.2
Total material passing the 75-µm (No. 200) sieve (nearest 0.01 percent)..... (14)	5.82	6.71	6.41	6.4	6.62	6.88	6.17
(Item #14: Mass removed by washing + Material in pan + Mineral matter + Increase in mass of filter)							
RECOVERY AND TESTING OF ASPHALT RESIDUE							
BY ABSON METHOD: Method Used - T170							
Penetration of Residue at 25°C, 100 g, 5 s (nearest unit): <i>Method Used – T49</i> (15)		22	33	29	26	Lab Error	27
Viscosity of Residue at 135°C (Pa-s, 4 sig. figures): <i>Method Used – T316</i> (16)		1.543	1.415	1.395	1.452	Lab Error	1.945
G* / sin δ at 64°C tested as original binder (nearest 0.01 kPa): <i>Method Used – T315</i> (17)		6.05	4.77	5.71	5.03	Lab Error	5.85
BY ROTAVAPOR METHOD: Method Used - T319							
Penetration of Residue at 25°C, 100 g, 5 s (nearest unit): <i>Method Used – T49</i> (18)	62						
Viscosity of Residue at 135°C (Pa-s, 4 sig. figures): <i>Method Used – T316</i> (19)	0.933						
G* / sin δ at 64°C tested as original binder (nearest 0.01 kPa): <i>Method Used – T315</i> (20)	3.38						

2011 ODOT MIX LAB ROUND ROBIN

	Sample No.	Sample No.	Sample No.	Sample No.	Sample No.	Sample No.	Sample No.	Sample No.
ASPHALT CONTENT: ODOT SS-1038	21	22	23	24	25	26	27	28
Sample Mass, assume moisture free (nearest 0.1 g): for informational purposes only..... (1)	2543.8	2544.6	2574.8	2634.5	2553.1	2562.5	2585.5	2514.4
Percent Asphalt (nearest 0.01 percent): (2)	5.38	5.18	5.15	5.35	5.26	5.18	4.74	5.32
F/A Ratio: (3)	1.3	1.25	1.2	1.2	1.24	1.15	1.6	1.09
F-T Value: (4)	-3	-3	-3	-3	-3	-3	-3	-3
MECHANICAL ANALYSIS: Per Method AASHTO- T30								
Washing Method? Manual , Mechanical Washing Apparatus If Mechanical, Time for Wash? _____ (minutes)								
Mass removed by washing over 75-µm (No. 200) sieve (nearest 0.1 g): <i>informational purposes only</i> (5)	2272.1	NoWash	2313.2	2356.2	NoWash	NoWash	116	119
REPORT THE TOTAL PERCENT PASSING EACH SIEVE:								
Total material passing the 12.5-mm (½ in.) sieve (nearest 0.1 percent)..... (6)	99.7	99.8	99.6	100	100	99.7	100	100
Total material passing the 9.5-mm (3/8 in.) sieve (nearest 0.1 percent)..... (7)	96.5	94.1	94.1	95.5	95.8	95.4	96.2	95.4
Total material passing the 4.75-mm (No. 4) sieve (nearest 0.1 percent)..... (8)	63	63.9	60.3	63.9	65.4	63.1	65.1	63.6
Total material passing the 2.36-mm (No. 8) sieve (nearest 0.1 percent)..... (9)	41.4	40.7	39.4	41.9	42.1	40.5	43.3	41.8
Total material passing the 1.18-mm (No. 16) sieve (nearest 0.1 percent)..... (10)	26.5	25.6	25.6	26.8	26.3	25.7	27.1	26
Total material passing the 600-µm (No. 30) sieve (nearest 0.1 percent)..... (11)	18.2	18	17.6	18.2	18.2	17.9	19	18
Total material passing the 300-µm (No. 50) sieve (nearest 0.1 percent)..... (12)	13.2	13	12.7	13	13	12.7	13.8	12.7
Total material passing the 150-µm (No. 100) sieve (nearest 0.1 percent)..... (13)	9.8	9.6	9.3	9.6	9.5	9.1	10.2	9.1
Total material passing the 75-µm (No. 200) sieve (nearest 0.01 percent)..... (14)	6.6	6.46	6.2	6.3	6.52	5.95	7.485	5.8
(Item #14: Mass removed by washing + Material in pan + Mineral matter + Increase in mass of filter)								
RECOVERY AND TESTING OF ASPHALT RESIDUE								
BY ABSON METHOD: Method Used - T170								
Penetration of Residue at 25°C, 100 g, 5 s (nearest unit): <i>Method Used – T49</i> (15)	41	22	53		22	21	42	
Viscosity of Residue at 135°C (Pa·s, 4 sig. figures): <i>Method Used – T316</i> (16)	1.283	1.602	1.169		1.578	1.785	1.35	
G* / sin δ at 64°C tested as original binder (nearest 0.01 kPa): <i>Method Used – T315</i> (17)	7.07	5.94	4.32		6.04	6.87	5.15	
BY ROTAVAPOR METHOD: Method Used - T319								
Penetration of Residue at 25°C, 100 g, 5 s (nearest unit): <i>Method Used – T49</i> (18)				40				26
Viscosity of Residue at 135°C (Pa·s, 4 sig. figures): <i>Method Used – T316</i> (19)				1.197				1.8
G* / sin δ at 64°C tested as original binder (nearest 0.01 kPa): <i>Method Used – T315</i> (20)				5.24				8.46

2011 ODOT MIX LAB ROUND ROBIN

	Sample No.	Sample No.	Sample No.	Sample No.	Sample No.	Sample No.	Sample No.
ASPHALT CONTENT: ODOT SS-1038	29	30	31	32	33	34	35
Sample Mass, assume moisture free (nearest 0.1 g): for informational purposes only..... (1)	2533.4	2532.3	1404.1	2532.2	2634.1	2601.4	2514
Percent Asphalt (nearest 0.01 percent): (2)	5.31	5.29	4.94	5.42	5.07	5.37	4.9
F/A Ratio: (3)	1.28	1.19	1.19	1.2	1.2	1.2	1.1
F-T Value: (4)	-3	-3		-3	-3	-3	-2
MECHANICAL ANALYSIS: Per Method AASHTO- T30							
Washing Method? Manual , Mechanical Washing Apparatus If Mechanical, Time for Wash? _____ (minutes)							
Mass removed by washing over 75-µm (No. 200) sieve (nearest 0.1 g): <i>informational purposes only</i> (5)	139.4	NoWash	7	8.8	130.5	127.4	127.4
REPORT THE TOTAL PERCENT PASSING EACH SIEVE:							
Total material passing the 12.5-mm (½ in.) sieve (nearest 0.1 percent)..... (6)	100	99.8	99.1	100	100	100	100
Total material passing the 9.5-mm (3/8 in.) sieve (nearest 0.1 percent)..... (7)	95.3	95.1	94	95.3	94.4	95.2	95
Total material passing the 4.75-mm (No. 4) sieve (nearest 0.1 percent)..... (8)	64.8	64.2	56.7	65.4	58.4	64.9	62
Total material passing the 2.36-mm (No. 8) sieve (nearest 0.1 percent)..... (9)	43.2	41.6	35.5	42.7	38	41.8	41
Total material passing the 1.18-mm (No. 16) sieve (nearest 0.1 percent)..... (10)	26.9	26.1	23.5	25.8	24.8	25.7	25
Total material passing the 600-µm (No. 30) sieve (nearest 0.1 percent)..... (11)	18.7	19.1	17.2	18	17.5	18	18
Total material passing the 300-µm (No. 50) sieve (nearest 0.1 percent)..... (12)	13.3	12.8	12.5	12.9	12.8	13	13
Total material passing the 150-µm (No. 100) sieve (nearest 0.1 percent)..... (13)	9.8	9.3	9	9.2	9.4	9.4	9
Total material passing the 75-µm (No. 200) sieve (nearest 0.01 percent)..... (14)	6.8	6.31	5.9	6.41	6.29	6.32	5.6
(Item #14: Mass removed by washing + Material in pan + Mineral matter + Increase in mass of filter)							
RECOVERY AND TESTING OF ASPHALT RESIDUE							
BY ABSON METHOD: Method Used - T170							
Penetration of Residue at 25°C, 100 g, 5 s (nearest unit): <i>Method Used – T49</i> (15)	36	27	28	33		29	21
Viscosity of Residue at 135°C (Pa-s, 4 sig. figures): <i>Method Used – T316</i> (16)	1.317	1.725	1.329	Lab Error		1.311	1.487
G* / sin δ at 64°C tested as original binder (nearest 0.01 kPa): <i>Method Used – T315</i> (17)	5.05	5.77	5.28	Lab Error		5.03	7.65
BY ROTAVAPOR METHOD: Method Used - T319							
Penetration of Residue at 25°C, 100 g, 5 s (nearest unit): <i>Method Used – T49</i> (18)					36		
Viscosity of Residue at 135°C (Pa-s, 4 sig. figures): <i>Method Used – T316</i> (19)					1.637		
G* / sin δ at 64°C tested as original binder (nearest 0.01 kPa): <i>Method Used – T315</i> (20)					6.5		

2011 ODOT MIX LAB ROUND ROBIN

ASPHALT CONTENT: ODOT SS-1038	Std Dev	(-) 2 DEV	(-) 1 DEV	Mean	(+) 1 DEV	(+) 2 DEV
Sample Mass, assume moisture free (nearest 0.1 g): for informational purposes only..... (1)	342.295	1815.003	2157.298	2499.593	2841.888	3184.184
Percent Asphalt (nearest 0.01 percent): (2)	0.169	4.912	5.080	5.249	5.417	5.586
F/A Ratio: (3)	0.090	1.048	1.139	1.229	1.319	1.409
F-T Value: (4)	0.315	-3.523	-3.208	-2.893	-2.578	-2.263
MECHANICAL ANALYSIS: Per Method AASHTO- T30						
Washing Method? Manual , Mechanical Washing Apparatus If Mechanical, Time for Wash? _____ (minutes)						
Mass removed by washing over 75-µm (No. 200) sieve (nearest 0.1 g): <i>informational purposes only</i> (5)	852.833	-1241.628	-388.795	464.039	1316.872	2169.706
REPORT THE TOTAL PERCENT PASSING EACH SIEVE:						
Total material passing the 12.5-mm (½ in.) sieve (nearest 0.1 percent)..... (6)	0.201	99.458	99.659	99.860	100.061	100.262
Total material passing the 9.5-mm (3/8 in.) sieve (nearest 0.1 percent)..... (7)	0.781	93.521	94.302	95.083	95.865	96.646
Total material passing the 4.75-mm (No. 4) sieve (nearest 0.1 percent)..... (8)	2.114	59.093	61.207	63.321	65.434	67.548
Total material passing the 2.36-mm (No. 8) sieve (nearest 0.1 percent)..... (9)	4.319	33.229	37.548	41.867	46.185	50.504
Total material passing the 1.18-mm (No. 16) sieve (nearest 0.1 percent)..... (10)	3.063	20.304	23.367	26.430	29.493	32.556
Total material passing the 600-µm (No. 30) sieve (nearest 0.1 percent)..... (11)	1.536	15.308	16.844	18.380	19.916	21.452
Total material passing the 300-µm (No. 50) sieve (nearest 0.1 percent)..... (12)	1.164	10.672	11.836	13.000	14.164	15.328
Total material passing the 150-µm (No. 100) sieve (nearest 0.1 percent)..... (13)	0.626	8.081	8.707	9.332	9.958	10.584
Total material passing the 75-µm (No. 200) sieve (nearest 0.01 percent)..... (14)	0.385	5.667	6.052	6.438	6.823	7.209
(Item #14: Mass removed by washing + Material in pan + Mineral matter + Increase in mass of filter)						
RECOVERY AND TESTING OF ASPHALT RESIDUE						
BY ABSON METHOD: Method Used - T170						
Penetration of Residue at 25°C, 100 g, 5 s (nearest unit): <i>Method Used – T49</i> (15)	8.190	14.419	22.610	30.800	38.990	47.181
Viscosity of Residue at 135°C (Pa-s, 4 sig. figures): <i>Method Used – T316</i> (16)	0.185	1.086	1.271	1.456	1.641	1.827
G* / sin δ at 64°C tested as original binder (nearest 0.01 kPa): <i>Method Used – T315</i> (17)	0.803	3.969	4.772	5.576	6.379	7.182
BY ROTAVAPOR METHOD: Method Used - T319						
Penetration of Residue at 25°C, 100 g, 5 s (nearest unit): <i>Method Used – T49</i> (18)	15.188	10.625	25.812	41.000	56.188	71.375
Viscosity of Residue at 135°C (Pa-s, 4 sig. figures): <i>Method Used – T316</i> (19)	0.398	0.596	0.994	1.392	1.790	2.188
G* / sin δ at 64°C tested as original binder (nearest 0.01 kPa): <i>Method Used – T315</i> (20)	2.137	1.621	3.758	5.895	8.032	10.169