



Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S3 (PG 64-22 OK) Mat'l. Code: asco009
 (Material Full Name and Material Code)
 Cummins Const Co P/S # m00556
 (Producer/Supplier Name and Producer/Supplier Code)
 Cummins Const Co #2754 (Binger, OK.) - 300TPH PLANT ID # m00556-15
 (Plant Name and Plant ID)

Binder - Recycled ID: B2
 (Design Type and Design Type ID)
 WS3qc0101802600
 (Mix ID)

Aggregate	Producer/Supplier	% USED
1 1/2" Rock	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	15
1/2" Chips	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	15
Stone Sand	Dolese Co. (Richards Spur, OK) P/S # m002761601	29
Scrns.	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	8
Sand (Unlisted Source)	Lightle Sand Hennessey, OK	8
Fine R.A.P.	Contractor / Project Site P/S # Contractor	25
Warm Mix Asphalt (WMA) Technology: TEREX (Foaming Process) qual028 Terex Roadbuilding m00801 (Product Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		
Asphalt Cement: Asphaltic Cement Type PG 64-22 OK, acem003, Coastal Energy (Clinton, OK), m01042 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:							Comb. Agg.	Requires Form 93-E0 signed by the Department for production use. -Oklahoma D.O.T. Materials-			
	1 1/2" Rock	1/2" Chips	Stone Sand	Scrns.	Sand (Unlisted Source)	Fine R.A.P.			JMF	Min.	Max.	% Tol. (±)
1 in (25 mm)	100	100	100	100	100	100	100	100	100	100	100	0
3/4 in (19 mm)	81	100	100	100	100	100	97	97	90	100	7	7
1/2 in (12.5 mm)	30	100	100	100	100	100	90	90	83	97	7	7
3/8 in (9.5 mm)	10	90	100	99	100	95	84	84	77	91	7	7
#4 (4.75 mm)	1	12	97	79	100	83	65	65	58	72	7	7
#8 (2.36 mm)	1	1	62	53	100	67	47	47	42	52	5	5
#16 (1.18 mm)	1	1	32	33	99	46	32	32	28	36	4	4
#30 (.600 mm)	1	1	17	21	77	32	21	21	17	25	4	4
#50 (.300 mm)	1	1	8	16	30	21	12	12	8	16	4	4
#100 (.150 mm)	1	1	5	14	7	14	7	7	4	10	3	3
#200 (.075 mm)	0.8	0.9	4.1	13.1	1.2	8.5	4.7	4.7	2.7	6.7	2	2
AC Content %						5.0	4.4	4.4	4.0	4.8	0.4	0.4

Warm Mix Asphalt (WMA) Additive %

2.0

Mix temperature @ discharge from mixer: 275 (135) °F (°C) Required ± 20 °F (± 10 °C)
 Optimum roadway compaction temperature: 260 (127)
 Laboratory mixing temperature: 300 (149)
 Laboratory compaction temperature: 300 (149)

Tests on Asphalt Cement	Found
Specific Gravity @ 77 °F	1.0100

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	Tests on Compressed Mixtures (@ Design AC)		
	# Gyr.	% Density of Gmm	% Density Required
Nini	6	88.9	85.5 - 91.5
Ndes	50		96.0

Tests on Aggregates	Required	Units
Contabro	N/A	%
Durability Index	79	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	10	max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue	2.2	N/A %
LA Abrasion	25	40 max. %
Micro-Deval	12.7	N/A %
Permeability	1.5	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	87	40 min. %
Pba	0.42	
IOC	0.21	%
Gse	2.689	
Gsb	2.659	
Specimen Weight	4800	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required Design / Field	% VFA
			of Gmm	% Density Required			
3.9	2.381	2.525	94.3	Design / Field	13.9	Design / Field	59.0
4.4	2.406	2.506	96.0	96.0 / 94.5 - 97.4	13.5	13.5 / 13.0	70.4
4.9	2.415	2.486	97.1		13.6		78.7

Dust Prop. 1.3, 1.2, 1.0
 Dust Prop. Reg. 0.6 - 1.6
 ITS (PSI) 141.8 N/A min.
 TSR 0.88 0.80 / 0.75 min. (Design / Field)
 Compacted Wt. (lbs/sy/1" thick) = 110.2 @ 4.4 % Asphalt Cement
 3.1 % New Asphalt Cement
 Hamburg Rut Test Depth (mm) 2.69 12.50 max. @ 10,000 cycles
 Ifit N/A

MEETS SPECIFICATION REQUIREMENTS PER SPECIAL PROVISION 708-26(a-f) 09

Comments: _____

Last Modified By: McComack, Hunter J. hmccomac
 (User Name and User ID)

Date: 7/2/2018
 (mm/dd/yyyy)