



Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S4 (PG 76-28 OK) Mat'l. Code: asco010
 (Material Full Name and Material Code)
 Cummins Const Co P/S # m00556
 (Producer/Supplier Name and Producer/Supplier Code)
 Cummins Const Co #2728 (Sawyer, OK) - 300TPH PLANT ID # m00556-03
 (Plant Name and Plant ID)

Insoluble ID: I1
 (Design Type and Design Type ID)
 WS4qc0101800300
 (Mix ID)

Aggregate	Producer/Supplier	% USED
Pile # 5	Martin-Marietta (Sawyer, OK) P/S # m002311206	20
'D' Rock	Martin-Marietta (Sawyer, OK) P/S # m002311206	15
Coarse Scrns.	Martin-Marietta (Sawyer, OK) P/S # m002311206	25
Man. Sand	Martin-Marietta (Sawyer, OK) P/S # m002311206	25
Sand (Unlisted Source)	Drake Sand Gay, OK	15
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 76-28 OK, acem001, Lion Oil Frontier (Muskogee, OK), m01021 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:						Comb. Agg.	Tol. (%)			
	Pile # 5	'D' Rock	Coarse Scrns.	Man. Sand	Sand (Unlisted Source)	Drake Sand Gay, OK		JMF	Min.	Max.	(±)
3/4 in (19 mm)	100	100	100	100	100	100	100	100	100	0	
1/2 in (12.5 mm)	74	100	100	100	100	95	95	88	100	7	
3/8 in (9.5 mm)	17	94	97	100	100	82	82	75	89	7	
#4 (4.75 mm)	3	29	68	99	100	62	62	55	69	7	
#8 (2.36 mm)	3	8	48	70	99	46	46	41	51	5	
#16 (1.18 mm)	2	3	36	47	98	36	36	32	40	4	
#30 (.600 mm)	2	3	30	34	90	30	30	26	34	4	
#50 (.300 mm)	1	3	26	25	46	20	20	16	24	4	
#100 (.150 mm)	1	2	19	12	3	9	9	6	12	3	
#200 (.075 mm)	0.5	1.2	11.6	3.5	1.1	4.2	4.2	2.2	6.2	2	
AC Content %						5.5	5.5	5.1	5.9	0.4	

**Requires Form 93-E0
 signed by the Department
 for production use.
 -Oklahoma D.O.T. Materials-**

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	8	88.6	85.5 - 89.0
Ndes	80		96.0

Tests on Aggregates	Required	Units
Durability Index	85	40 min. %
F.A.A. %U		N/A %
Flat and Elongated	10	max. %
Fractured Faces	100/100	98/95 min. %
Insoluble Residue	99.4	40 min. %
LA Abrasion	35	40 max. %
Micro-Deval	9.4	25 max. %
Permeability	4.6	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	67	50 min. %
Pba	0.68	
IOC	0.40	%
Gse	2.577	
Gsb	2.533	
Specimen Weight	4650	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA
5.0	2.271	2.391	95.0	Design / Field	14.8	Design / Field	66.2
5.5	2.279	2.374	96.0	96.0 / 94.5 - 97.4	15.0	14.5 / 14.0	73.3
6.0	2.297	2.358	97.4		14.8		82.4

Dust Prop.
 1.0 **Dust Prop. Req.**
 0.9 0.6 - 1.6
 0.8

ITS (PSI) 146.7 75 min.
TSR 1.08 0.80 / 0.75 min. (Design / Field)
 Compacted Wt. (lbs/sy/1" thick) = 104.5 @ 5.5 % Asphalt Cement

Hamburg Rut Test Depth (mm) 1.61 12.50 max. @ 20,000 cycles

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: 7/5/2018
 (mm/dd/yyyy)