



Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S4 (PG 64-22 OK) Mat'l. Code: asco012
 (Material Full Name and Material Code)
 Cummins Const Co P/S # m00556
 (Producer/Supplier Name and Producer/Supplier Code)
 Cummins Const Co #2741 (Sawyer, OK) - 300TPH PLANT ID # m00556-12
 (Plant Name and Plant ID)

Insoluble ID: I1
 (Design Type and Design Type ID)
 WS4qc0101404800
 (Mix ID)

Aggregate	Producer/Supplier	% USED
Pile # 5	Martin-Marietta (Sawyer, OK) P/S # m002311206	16
'D' Rock	Martin-Marietta (Eagletown, OK) P/S # m001374502	22
Man. Sand	Martin-Marietta (Eagletown, OK) P/S # m001374502	10
Scrns.	Martin-Marietta (Sawyer, OK) P/S # m002311206	37
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 64-22 OK, acem003, Asphalt Terminals and Transp LLC (Muskogee, OK), m00783 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:					Sand (Unlisted Source)	Comb. Agg.	%			Tol. (±)
	Pile # 5	'D' Rock	Man. Sand	Scrns.	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	96	96	89	100	7	
3/8 in (9.5 mm)	17	92	100	100	100	85	85	78	92	7	
#4 (4.75 mm)	3	20	100	99	100	67	67	60	74	7	
#8 (2.36 mm)	3	5	92	74	99	53	53	48	58	5	
#16 (1.18 mm)	2	4	75	52	98	43	43	39	47	4	
#30 (.600 mm)	2	3	57	42	90	36	36	32	40	4	
#50 (.300 mm)	1	2	27	36	52	24	24	20	28	4	
#100 (.150 mm)	1	2	6	23	5	10	10	7	13	3	
#200 (.075 mm)	0.5	1.2	2.1	14.8	1.1	6.2	6.2	4.2	8.2	2	
AC Content %						5.3	5.3	4.9	5.7	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

°F (°C) **Required**
 Mix temperature @ discharge from mixer: 275 (135) ± 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	90.9	85.5 - 91.5
Ndes	50		96.0

Tests on Aggregates	Required	Units
Durability Index	84	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	10	max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue	98.2	30 min. %
LA Abrasion	24	40 max. %
Micro-Deval	8.6	N/A %
Permeability	10.9	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	64	40 min. %
Pba	0.62	
IOC	0.27	%
Gse	2.615	
Gsb	2.574	
Specimen Weight	4650	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA
4.8	2.269	2.430	93.4	Design / Field	16.1	Design / Field	59.0
5.3	2.316	2.412	96.0	96.0 / 94.5 - 97.4	14.8	14.5 / 14.0	73.0
5.8	2.318	2.394	96.8		15.2		78.9

ITS (PSI) 183.4 N/A min.
TSR 0.81 0.80 / 0.75 min. (Design / Field)
Compacted Wt. (lbs/sy/1" thick) = 106.1 @ 5.3 % Asphalt Cement

Hamburg Rut Test Depth (mm) 2.78 12.50 max. @ 10,000 cycles

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

Comments: _____

Last Modified By: Schratwieser, Edward P. eschratw
 (User Name and User ID)

Date: 8/5/2014
 (mm/dd/yyyy)