



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 #2741 (Sawyer, OK) - 300TPH PLANT ID # m00556-12
 (Plant Name and Plant ID)

Insoluble - Recycled ID: I2
 (Design Type and Design Type ID)
 WS3qc0101307200
 (Mix ID)

Aggregate	Producer/Supplier	% USED
#67 Rock	Martin-Marietta (Eagletown, OK) P/S # m001374502	23
'D' Rock	Martin-Marietta (Eagletown, OK) P/S # m001374502	22
Scrns.	Martin-Marietta (Sawyer, OK) P/S # m002311206	20
Sand (Unlisted Source)	Drake Sand (Gay, OK)	10
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, Valero (Ardmore, OK), m00352 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:						Comb. Agg.	% Tol. (±)			
	#67 Rock	'D' Rock	Scrns.	Sand (Unlisted Source)	Fine R.A.P.			JMF	Min.	Max.	
1 in (25 mm)	100	100	100	100	100		100	100	100	0	
3/4 in (19 mm)	97	100	100	100	100		99	92	100	7	
1/2 in (12.5 mm)	39	100	100	100	98		85	78	92	7	
3/8 in (9.5 mm)	12	92	100	100	92		76	69	83	7	
#4 (4.75 mm)	2	30	99	100	71		55	48	62	7	
#8 (2.36 mm)	2	5	74	99	52		39	34	44	5	
#16 (1.18 mm)	2	4	52	98	41		32	28	36	4	
#30 (.600 mm)	2	3	42	90	37		28	24	32	4	
#50 (.300 mm)	1	2	36	52	32		21	17	25	4	
#100 (.150 mm)	1	2	23	5	20		11	8	14	3	
#200 (.075 mm)	0.5	1.2	14.8	1.1	8.8		5.6	3.6	7.6	2	
AC Content %					5.7		4.4	4.0	4.8	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) ± 20 °F (± 10 °C) **Required**
 Optimum roadway compaction temperature: 260 (127)
 Laboratory mixing temperature: 300 (149)
 Laboratory compaction temperature: 300 (149)

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	78.9	30 min. %
LA Abrasion	24	40 max. %
Micro-Deval	8.6	N/A %
Permeability	3.9	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	68	40 min. %
Pba	0.24	
IOC	0.32	%
Gse	2.611	
Gsb	2.595	
Specimen Weight	4650	g

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	89.8	85.5 - 91.5
Ndes	50		96.0

Tests on Compressed Mixtures								
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required		% VFA
			of Gmm	% Density Required		Design / Field	Design / Field	
3.9	2.292	2.459	93.2	96.0 / 94.5 - 97.4	15.1	13.5 / 13.0	55.0	% VFA Required
4.4	2.343	2.441	96.0		13.7		70.8	70 - 75
4.9	2.364	2.423	97.6		13.4		82.1	

Dust Prop.
 1.5 **Dust Prop. Req.** 0.6 - 1.6
 1.3
 1.2

ITS (PSI) 270.3 N/A min.
TSR 0.85 0.80 / 0.75 min. (Design / Field)
 Compacted Wt. (lbs/sy/1" thick) = 107.4 @ 4.4 % Asphalt Cement
 3.0 % New Asphalt Cement

Hamburg Rut Test Depth (mm) 0.82 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: 2/24/2014
 (mm/dd/yyyy)