



# 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)

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

Cummins Const Co P/S # m00556  
 (Producer/Supplier Name and Producer/Supplier Code)

WS3qc0101680401  
 (Mix ID)

Cummins Const Co (Portable)- 400TPH PLANT ID # m00556-16  
 (Plant Name and Plant ID)

Aggregate	Producer/Supplier	% USED
#67 Rock	Dolese Co (Ardmore, OK) P/S # m002701001	25
3/8" Chips	Dolese Co (Ardmore, OK) P/S # m002701001	15
Stone Sand	Martin-Marietta (Davis, OK) P/S # m002285005	15
Scrns.	Dolese Co (Ardmore, OK) P/S # m002701001	10
Sand (Unlisted Source)	Flume Sand (Thackerville, 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. (±)			
	Dolese Co (Ardmore, OK) P/S # m002701001	Dolese Co (Ardmore, OK) P/S # m002701001	Martin-Marietta (Davis, OK) P/S # m002285005	Dolese Co (Ardmore, OK) P/S # m002701001	Flume Sand (Thackerville, OK)	Contractor / Project Site P/S # Contractor			JMF	Min.	Max.	
#67 Rock	100	100	100	100	100	100		100	100	100	0	
3/8" Chips	95	100	100	100	100	100		99	99	92	100	7
Stone Sand	50	100	100	100	100	98		87	90	83	97	7
Scrns.	26	97	100	100	100	96		80	80	73	87	7
Sand (Unlisted Source)	6	27	89	90	100	80		58	60	53	67	7
Fine R.A.P.	3	6	52	59	100	62		41	44	39	49	5
	3	3	29	35	100	48		31	32	28	36	4
	3	3	18	23	98	38		26	25	21	29	4
	3	2	11	18	68	26		18	18	14	22	4
	2	2	8	16	23	14		9	10	7	13	3
	2.0	1.9	5.1	13.1	3.9	8.5		5.4	6.0	4.0	8.0	2
AC Content %						5.0		4.3	4.3	3.9	4.7	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

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	88.5	85.5 - 91.5
Ndes	50		96.0

Tests on Aggregates	Required	Units
Durability Index	71	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	0	10 max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue	2.1	N/A %
LA Abrasion	28	40 max. %
Micro-Deval	13.9	N/A %
Permeability	2.5	12.5 max. 10 <sup>-5</sup> cm/s
Sand Equivalent	78	40 min. %
Pba	0.34	
IOC	0.15	%
Gse	2.697	
Gsb	2.673	
Specimen Weight	4900	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA
3.8	2.383	2.536	94.0	Design / Field	14.2	Design / Field	57.7
4.3	2.415	2.516	96.0	96.0 / 94.5 - 97.4	13.5	13.5 / 13.0	70.4
4.8	2.432	2.497	97.4		13.4		80.6

Dust Prop. 1.5, 1.4, 1.2  
 Dust Prop. Req. 0.6 - 1.6  
 ITS (PSI) 203 N/A min.  
 TSR 0.90 0.80 / 0.75 min. (Design / Field)  
 Compacted Wt. (lbs/sy/1" thick) = 110.7 @ 4.3 % Asphalt Cement  
 3.0 % New Asphalt Cement

xxx 3rd JMF Revision Hamburg Rut Test Depth (mm) 2.62 12.50 max. @ 10,000 cycles

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

Comments: REVISED (GRAD.) Effective 2/20/17 per contractor's request.

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

Date: 11/6/2018  
 (mm/dd/yyyy)