



# 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)

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

Caswell Contracting Inc. P/S # m00551  
 (Producer/Supplier Name and Producer/Supplier Code)

WS3pv0441601201  
 (Mix ID)

Caswell Contracting (Elk City, OK) - 350TPH PLANT ID # m00551-02  
 (Plant Name and Plant ID)

Aggregate	Producer/Supplier	% USED
1" Rock	Martin-Marietta (Snyder, OK) P/S # m002323802	10
5/8" Chips	Martin-Marietta (Snyder, OK) P/S # m002323802	45
Scrns.	Martin-Marietta (Snyder, OK) P/S # m002323802	30
Sand (Unlisted Source)	McLemore Sand (Elk City, OK)	15
Warm Mix Asphalt (WMA) Technology: EVOTHERM (Chem. Add.) qual028 Ingevity m00941 (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:				Sand (Unlisted Source)	Comb. Agg.	Tol. (%)		
	Martin-Marietta (Snyder, OK) P/S # m002323802	Martin-Marietta (Snyder, OK) P/S # m002323802	Martin-Marietta (Snyder, OK) P/S # m002323802	McLemore Sand (Elk City, OK)			JMF	Min.	Max.
1" Rock	100	100	100	100	100	100	100	100	0
3/4 in (19 mm)	76	100	100	100	98	98	91	100	7
1/2 in (12.5 mm)	23	82	100	100	84	90	83	97	7
3/8 in (9.5 mm)	12	57	100	100	72	77	70	84	7
#4 (4.75 mm)	3	13	98	100	51	52	45	59	7
#8 (2.36 mm)	1	2	73	99	38	38	33	43	5
#16 (1.18 mm)	1	1	43	98	28	28	24	32	4
#30 (.600 mm)	0	1	30	87	23	23	19	27	4
#50 (.300 mm)	0	1	23	37	13	13	9	17	4
#100 (.150 mm)	0	1	17	14	8	8	5	11	3
#200 (.075 mm)	0.1	0.7	10.3	5.6	4.3	4.3	2.3	6.3	2
AC Content %					4.8	4.8	4.4	5.2	0.4

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

Warm Mix Asphalt (WMA) Additive % 0.4

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: 275 (135)

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	88.6	85.5 - 91.5
Ndes	50		96.0

Tests on Aggregates	Required	Units
Durability Index	86	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	2	10 max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue	97.9	30 min. %
LA Abrasion	20.1	40 max. %
Micro-Deval	4.1	N/A %
Permeability	2	12.5 max. 10 <sup>-5</sup> cm/s
Sand Equivalent	79	40 min. %
Pba	0.29	
IOC	0.04	%
Gse	2.633	
Gsb	2.613	
Specimen Weight	4727	g

Tests on Compressed Mixtures								
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required		% VFA
			of Gmm	% Density Required		Design / Field	Design / Field	
4.3	2.318	2.463	94.1	96.0 / 94.5 - 97.4	15.1	13.5 / 13.0	60.9	% VFA Required
4.8	2.345	2.444	95.9		14.6		71.9	70 - 75
5.3	2.371	2.426	97.7		14.1		83.7	

ITS (PSI) 87.3 N/A min.  
 TSR 0.97 0.80 / 0.75 min. (Design / Field)  
 Compacted Wt. (lbs/sy/1" thick) = 107.5 @ 4.8 % Asphalt Cement

Dust Prop. 1.1 Dust Prop. Req. 0.6 - 1.6  
 1.0  
 0.9

x 1st JMF Revision

Hamburg Rut Test Depth (mm) 3.72 12.50 max. @ 10,000 cycles

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

Comments: Revised JMF by contractor: Effective 5/21/2018

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

Date: 5/22/2018  
 (mm/dd/yyyy)