



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)

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

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

WS4pv0441690701
 (Mix ID)

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

Aggregate	Producer/Supplier	% USED
5/8" Chips	Martin-Marietta (Snyder, OK) P/S # m002323802	45
Man. Sand	Martin-Marietta (Snyder, OK) P/S # m002323802	10
Scrns.	Martin-Marietta (Snyder, OK) P/S # m002323802	35
Sand (Unlisted Source)	McLemore Sand (Elk City, OK)	10
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 76-28 OK, acem001, 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.	
3/4 in (19 mm)	100	100	100	100	100	100	100	100	0	
1/2 in (12.5 mm)	82	100	100	100	92	92	85	99	7	
3/8 in (9.5 mm)	57	100	100	100	81	81	74	88	7	
#4 (4.75 mm)	11	95	98	100	59	59	52	66	7	
#8 (2.36 mm)	2	70	73	99	43	43	38	48	5	
#16 (1.18 mm)	1	44	43	98	30	30	26	34	4	
#30 (.600 mm)	1	26	30	87	22	22	18	26	4	
#50 (.300 mm)	1	13	23	37	14	14	10	18	4	
#100 (.150 mm)	1	5	17	14	8	8	5	11	3	
#200 (.075 mm)	0.7	2.6	10.3	5.6	4.7	4.7	2.7	6.7	2	
AC Content %					5.1	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

	°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:	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	8	89.4	85.5 - 89.0
Ndes	80		96.0

Tests on Aggregates	Required	Units
Durability Index	86	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	3	10 max. %
Fractured Faces	100/100	98/95 min. %
Insoluble Residue	97.7	40 min. %
LA Abrasion	20.1	40 max. %
Micro-Deval	4.1	25 max. %
Permeability	9.8	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	81	50 min. %
Pba	0.16	
IOC	0.05	%
Gse	2.629	
Gsb	2.618	
Specimen Weight	4737	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density		% VMA	% VFA	
			of Gmm	% Density Required		Design / Field	% VFA Required
4.5	2.307	2.452	94.1	Design / Field	15.8	Design / Field	62.7
5.0	2.330	2.434	95.7	96.0 / 94.5 - 97.4	15.5	14.5 / 14.0	72.3
5.5	2.345	2.416	97.1		15.4		81.2

Dust Prop. 1.1 1.0 0.9	Dust Prop. Req. 0.6 - 1.6	ITS (PSI) 79.3 75 min. TSR 0.93 0.80 / 0.75 min. (Design / Field)
		Compacted Wt. (lbs/sy/1" thick) = 107.4 @ 5.1 % Asphalt Cement

x 1st JMF Revision

Hamburg Rut Test Depth (mm) 2.14 #N/A

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

Comments: REVISED (AC) Effective 9/21/16 per contractor's request.

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

Date: 6/22/2018
 (mm/dd/yyyy)