



Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S4 (PG 64-22 OK) Mat'l. Code: asco012

Insoluble ID: I1

(Material Full Name and Material Code)

(Design Type and Design Type ID)

Caswell Contracting Inc. P/S # m00551

WS4pv0441601101

(Producer/Supplier Name and Producer/Supplier Code)

(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 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.	JMF			% 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)			Min.	Max.		
5/8" Chips	100	100	100	100	100	100	100	100	0	
3/4 in (19 mm)	82	100	100	100	92	92	85	99	7	
1/2 in (12.5 mm)	57	100	100	100	81	81	74	88	7	
3/8 in (9.5 mm)	13	95	98	100	60	60	53	67	7	
#4 (4.75 mm)	2	70	73	99	43	43	38	48	5	
#8 (2.36 mm)	1	44	43	98	30	30	26	34	4	
#16 (1.18 mm)	1	26	30	87	22	22	18	26	4	
#30 (.600 mm)	1	13	23	37	14	14	10	18	4	
#50 (.300 mm)	1	5	17	14	8	8	5	11	3	
#100 (.150 mm)	0.7	2.6	10.3	5.6	4.7	4.7	2.7	6.7	2	
#200 (.075 mm)					5.0	5.0	4.6	5.4	0.4	
AC Content %										

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 Aggregates	Required	Units
Durability Index	86	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	3	10 max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue	96.9	30 min. %
LA Abrasion	20.1	40 max. %
Micro-Deval	4.1	N/A %
Permeability	10.2	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	81	40 min. %
Pba	0.21	%
IOC	0.08	%
Gse	2.632	
Gsb	2.618	
Specimen Weight	4757	g

Tests on Asphalt Cement	Found
Specific Gravity @ 77 ° F	1.0100

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

Tests on Compressed Mixtures (@ Design AC)			
	# Gyr.	% Density of Gmm	% Density Required
Nini	6	89.2	85.5 - 91.5
Ndes	50		96.0

Tests on Compressed Mixtures								
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required	% VFA	% VFA Required
			of Gmm	% Density Required				
4.5	2.278	2.455	92.8	Design / Field	16.9	Design / Field	57.4	72 - 77
5.0	2.314	2.436	95.0	96.0 / 94.5 - 97.4	16.0	14.5 / 14.0	68.8	
5.5	2.328	2.418	96.3		16.0		76.9	

Dust Prop.	1.1	Dust Prop. Req.	ITS (PSI)	123.2	N/A min.		
	1.0		TSR	0.99	0.80 / 0.75 min. (Design / Field)		
	0.9		Compacted Wt. (lbs/sy/1" thick) =	107.2	@	5.0	% Asphalt Cement

Hamburg Rut Test Depth (mm) 3.66 12.50 max. @ 10,000 cycles

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

Comments:

Revised JMF by Contractor: Effective 09/19/2017 ksuitoer 09/19/2017

Last Modified By:

Suitoer, Kevin ksuitoer
(User Name and User ID)

Date:

9/19/2017
(mm/dd/yyyy)