



Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S4 (PG 64-22 OK) Mat'l. Code: asco012
 (Material Full Name and Material Code)
 J & R Sand Co P/S # m00560
 (Producer/Supplier Name and Producer/Supplier Code)
 J & R Sand Co (Portable) - 350TPH PLANT ID # m00560-01
 (Plant Name and Plant ID)

Binder - Recycled ID: B2
 (Design Type and Design Type ID)
 WS4qc0611500302
 (Mix ID)

Aggregate	Producer/Supplier	% USED
3/4" Chips	Klotz Sand and Gravel (Lakin, KS) P/S # m008758021	20
W. Scrns.	Klotz Sand and Gravel (Lakin, KS) P/S # m008758021	30
Scrns.	Klotz Sand and Gravel (Lakin, KS) P/S # m008758021	14
Sand	J & R Sand Co, Winchell Pit (Beaver Co., OK) P/S # m002050402	11
Fine R.A.P.	Contractor / Project Site P/S # Contractor	25
Warm Mix Asphalt (WMA) Technology: EVOTHERM (Chem. Add.) qual028 Mead Westvaco Asphalt Innovations m00798 (Product Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		
Asphalt Cement: Asphaltic Cement Type PG 64-22 OK, acem003, Valero Mckee (Sunray, TX), m00311 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	3/4" Chips	W. Scrns.	Scrns.	Sand	Fine R.A.P.	Comb. Agg.	% Tol. (±)			
							JMF	Min.	Max.	
3/4 in (19 mm)	100	100	100	100	100	100	100	100	100	0
1/2 in (12.5 mm)	62	100	100	100	95	91	91	84	98	7
3/8 in (9.5 mm)	36	96	97	100	89	83	83	76	90	7
#4 (4.75 mm)	5	88	76	99	72	67	67	60	74	7
#8 (2.36 mm)	3	74	52	88	58	54	52	47	57	5
#16 (1.18 mm)	2	52	34	60	46	39	38	34	42	4
#30 (.600 mm)	2	33	23	36	35	26	26	22	30	4
#50 (.300 mm)	2	16	14	4	23	13	13	9	17	4
#100 (.150 mm)	2	7	9	3	13	7	7	4	10	3
#200 (.075 mm)	1.1	3.9	5.5	2.0	9.1	4.7	4.7	2.7	6.7	2
AC Content %					5.1	5.0	5.1	4.7	5.5	0.4

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

Warm Mix Asphalt (WMA) Additive % 0.5

°F (°C) **Required**

Mix temperature @ discharge from mixer: 285 (141) ± 20 °F (± 10 °C)

Optimum roadway compaction temperature: 245 (118)

Laboratory mixing temperature: 275 (135)

Laboratory compaction temperature: 235 (113)

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	90.1	85.5 - 91.5
Ndes	50		96.0

Tests on Aggregates	Required	Units
Durability Index	96	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	0	10 max. %
Fractured Faces	97/91	85/80 min. %
Insoluble Residue	72.5	N/A %
LA Abrasion	30	40 max. %
Micro-Deval	5.9	N/A %
Permeability	1.5	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	75	40 min. %
Pba	0.34	
IOC	0.23	%
Gse	2.631	
Gsb	2.608	
Specimen Weight	4750	g

Tests on Compressed Mixtures								
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA	% VFA Required
4.3	2.305	2.461	93.7	Design / Field	15.4	Design / Field	59.1	72 - 77
4.8	2.331	2.443	95.4	96.0 / 94.5 - 97.4	14.9	14.5 / 14.0	69.1	
5.3	2.349	2.425	96.9		14.7		78.9	

Dust Prop.

1.2	Dust Prop. Req.	ITS (PSI) 519.4	N/A min.
1.0	0.6 - 1.6	TSR 0.87	0.80 / 0.75 min. (Design / Field)
0.9		Compacted Wt. (lbs/sy/1" thick) = 107.0	@ 5.0 % Asphalt Cement
			3.7 % New Asphalt Cement

xx 2nd JMF Revision

Hamburg Rut Test Depth (mm) 5.78 12.50 max. @ 10,000 cycles

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

Comments: Revised AC by contractor: Effective 6/20/2018

Last Modified By: McComack, Hunter J. hmccomac Date: 6/28/2018
 (User Name and User ID) (mm/dd/yyyy)