



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)

Insoluble ID: I1
 (Design Type and Design Type ID)
 WS4qc0611500801
 (Mix ID)

Aggregate	Producer/Supplier	% USED
3/4" Chips	Klotz Sand and Gravel (Lakin, KS) P/S # m008758021	23
W. Scrns.	Klotz Sand and Gravel (Lakin, KS) P/S # m008758021	24
Crusher Run	J & R Sand Co, Winchell Pit (Beaver Co., OK) P/S # m002050402	30
Sand	J & R Sand Co, Winchell Pit (Beaver Co., OK) P/S # m002050402	15
Scrns.	Dolese Co (Cooperton, OK) P/S # m002723801	8
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.	Crusher Run	Sand	Scrns.	Comb. Agg.	%			
							JMF	Min.	Max.	Tol. (±)
3/4 in (19 mm)	100	100	100	100	100	100	100	100	100	0
1/2 in (12.5 mm)	62	97	100	100	100	91	91	84	98	7
3/8 in (9.5 mm)	36	96	97	100	100	83	81	74	88	7
#4 (4.75 mm)	5	88	59	99	86	62	62	55	69	7
#8 (2.36 mm)	3	74	27	88	54	44	46	41	51	5
#16 (1.18 mm)	2	52	17	60	35	30	34	30	38	4
#30 (.600 mm)	2	33	13	36	24	20	23	19	27	4
#50 (.300 mm)	2	16	10	4	17	9	14	10	18	4
#100 (.150 mm)	2	7	8	3	13	6	7	4	10	3
#200 (.075 mm)	1.1	3.9	6.5	2.0	10.0	4.2	4.8	2.8	6.8	2
AC Content %						5.0	5.2	4.8	5.6	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

Mix temperature @ discharge from mixer: 285 (141) ± 20 °F (± 10 °C) **Required**
 Optimum roadway compaction temperature: 245 (118)
 Laboratory mixing temperature: 275 (135)
 Laboratory compaction temperature: 235 (113)

Tests on Aggregates	Required	Units
Durability Index	54	40 min. %
F.A.A. %U		N/A %
Flat and Elongated	0	10 max. %
Fractured Faces	85/80	85/80 min. %
Insoluble Residue	65.9	30 min. %
LA Abrasion	30	40 max. %
Micro-Deval	5.9	N/A %
Permeability	1.3	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	78	40 min. %
Pba	0.34	
IOC	*0.31	%
Gse	2.625	
Gsb	2.602	
Specimen Weight	4750	g

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	89.0	85.5 - 91.5
Ndes	50		96.0

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density		% VMA	% VFA	
			of Gmm	% Density Required		Design / Field	% VFA Required
4.3	2.303	2.456	93.8	Design / Field	15.3	Design / Field	59.5
4.8	2.323	2.438	95.3	96.0 / 94.5 - 97.4	15.0	14.5 / 14.0	68.7
5.3	2.347	2.420	97.0		14.6		79.5

Dust Prop.
 1.1 **Dust Prop. Req.** 0.6 - 1.6
 0.9
 0.8

ITS (PSI) 346 N/A min.
TSR 0.88 0.80 / 0.75 min. (Design / Field)
 Compacted Wt. (lbs/sy/1" thick) = 106.6 @ 5.0 % Asphalt Cement

x 1st JMF Revision

Hamburg Rut Test Depth (mm) 4.20 12.50 max. @ 10,000 cycles

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

Comments: REVISED (AC, GRAD & IOC) Effective 5/12/15 per contractor's request.

Last Modified By: Schratwieser, Edward P. eschratw
 (User Name and User ID)

Date: 5/19/2015
 (mm/dd/yyyy)