



Oklahoma Department of Transportation Mix Design Report

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

Binder - Recycled ID: B2

(Material Full Name and Material Code)

(Design Type and Design Type ID)

J & R Sand Co P/S # m00560

WS4qc0611700500

(Producer/Supplier Name and Producer/Supplier Code)

(Mix ID)

J & R Sand Co (Portable) Felt, OK- 350TPH PLANT ID # m00560-02

(Plant Name and Plant ID)

Aggregate	Producer/Supplier	% USED
5/8" Chips	Dolese Co (Cooperton, OK) P/S # m002723801	18
3/8" Chips	Dolese Co (Cooperton, OK) P/S # m002723801	18
Scrns.	Dolese Co (Cooperton, OK) P/S # m002723801	8
Stone Sand	Dolese Co. (Roosevelt, OK) P/S # m010483804	20
Sand	Kline Sand (Camargo, OK) P/S # m005932206	11
Coarse R.A.P.	Contractor / Project Site P/S # Contractor	25
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:							Comb. Agg.	Tol. (±)		
	5/8" Chips	3/8" Chips	Scrns.	Stone Sand	Sand	Coarse R.A.P.	JMF		Min.	Max.	
3/4 in (19 mm)	100	100	100	100	100	100	100	100	100	100	0
1/2 in (12.5 mm)	92	100	100	100	100	95	97	97	90	100	7
3/8 in (9.5 mm)	45	97	100	100	100	86	86	86	79	93	7
#4 (4.75 mm)	3	13	86	96	100	65	56	56	49	63	7
#8 (2.36 mm)	2	3	54	70	100	50	43	43	38	48	5
#16 (1.18 mm)	1	2	34	49	99	40	34	34	30	38	4
#30 (.600 mm)	1	1	24	32	89	33	27	27	23	31	4
#50 (.300 mm)	1	1	17	19	40	23	16	16	12	20	4
#100 (.150 mm)	1	1	13	9	6	13	7	7	4	10	3
#200 (.075 mm)	1.0	1.0	10.4	4.1	1.5	6.9	3.9	3.9	1.9	5.9	2
AC Content %						5.2	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) ± 20 °F (± 10 °C)
 Optimum roadway compaction temperature: 245 (118)
 Laboratory mixing temperature: 285 (141)
 Laboratory compaction temperature: 235 (113)

Tests on Aggregates	Required	Units
Durability Index	84	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	0	10 max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue	12.1	N/A %
LA Abrasion	29	40 max. %
Micro-Deval	16.4	N/A %
Permeability	1.4	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	80	40 min. %
Pba	0.26	%
IOC	0.04	%
Gse	2.737	%
Gsb	2.718	%
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	90.1	85.5 - 91.5
Ndes	50		96.0

Tests on Compressed Mixtures								
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA	% VFA Required
4.3	2.402	2.550	94.2	Design / Field	15.4	Design / Field	62.3	72 - 77
4.8	2.428	2.529	96.0	96.0 / 94.5 - 97.4	15.0	14.5 / 14.0	73.3	
5.3	2.453	2.510	97.7		14.5		84.1	

Dust Prop. 1.0 Dust Prop. Req. 0.6 - 1.6
 0.8
 0.8

ITS (PSI) 259.8 N/A min.
 TSR 0.89 0.80 / 0.75 min. (Design / Field)
 Compacted Wt. (lbs/sy/1" thick) = 111.3 @ 4.8 % Asphalt Cement
 3.5 % New Asphalt Cement

Hamburg Rut Test Depth (mm) 4.44 12.50 max. @ 10,000 cycles

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

Comments:

Last Modified By:

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(User Name and User ID)

Date: 4/28/2017
(mm/dd/yyyy)