



Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S4 (PG 76-28 OK) Mat'l. Code: asco010

Insoluble ID: I1

(Material Full Name and Material Code)

(Design Type and Design Type ID)

J & R Sand Co P/S # m00560

WS4qc0611800600

(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	14
5/8" Chips	Dolese Co. (Roosevelt, OK) P/S # m010483804	13
Scrns.	Dolese Co (Cooperton, OK) P/S # m002723801	34
Stone Sand	Dolese Co. (Roosevelt, OK) P/S # m010483804	24
Sand	Kline Sand (Camargo, OK) P/S # m005932206	15
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:					Comb. Agg.	Tol. (%)			
	5/8" Chips	5/8" Chips	Scrns.	Stone Sand	Sand		JMF	Min.	Max.	(±)
3/4 in (19 mm)	100	100	100	100	100	100	100	100	100	0
1/2 in (12.5 mm)	92	94	100	100	100	98	98	91	100	7
3/8 in (9.5 mm)	45	59	100	100	100	87	87	80	94	7
#4 (4.75 mm)	3	5	86	96	100	68	68	61	75	7
#8 (2.36 mm)	2	3	54	70	100	51	51	46	56	5
#16 (1.18 mm)	1	2	34	49	99	39	39	35	43	4
#30 (.600 mm)	1	2	24	32	89	30	30	26	34	4
#50 (.300 mm)	1	1	17	19	40	17	17	13	21	4
#100 (.150 mm)	1	1	13	9	6	8	8	5	11	3
#200 (.075 mm)	1.0	1.0	10.4	4.1	1.5	5.0	5.0	3.0	7.0	2
AC Content %						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

	°F (°C)	Required
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 Asphalt Cement	Found
Specific Gravity @ 77 °F	1.0100

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	% Density		
	# Gyr.	of Gmm	% Density Required
Nini	8	90.0	85.5 - 89.0
Ndes	80		96.0

Tests on Aggregates	Required	Units
Contabro	N/A	%
Durability Index	84	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	0	10 max. %
Fractured Faces	100/100	98/95 min. %
Insoluble Residue	41.7	40 min. %
LA Abrasion	29	40 max. %
Micro-Deval	16.4	25 max. %
Permeability	2	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	77	50 min. %
Pba	0.42	
IOC	0.11	%
Gse	2.753	
Gsb	2.722	
Specimen Weight	4750	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required	% VFA
			of Gmm	% Density Required			
4.3	2.429	2.563	94.8	Design / Field	14.6	Design / Field	64.4 % VFA Required
4.8	2.444	2.542	96.1	96.0 / 94.5 - 97.4	14.5	14.5 / 14.0	73.1 72 - 77
5.3	2.451	2.522	97.2		14.7		81.0

Dust Prop.	Dust Prop. Reg.
1.3	0.6 - 1.6
1.1	
1.0	

ITS (PSI) 237 75 min.
 TSR 0.90 0.80 / 0.75 min. (Design / Field)
 Compacted Wt. (lbs/sy/1" thick) = 111.8 @ 4.8 % Asphalt Cement

Hamburg Rut Test Depth (mm) 3.72 12.50 max. @ 20,000 cycles

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

Comments:

Last Modified By: Smith, Jerry D. jsmith
(User Name and User ID)

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