



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

WS4qc0611800500

(Producer/Supplier Name and Producer/Supplier Code)

(Mix ID)

J & R Sand Co #AP 10 (Portable) - 350TPH PLANT ID # m00560-01

(Plant Name and Plant ID)

Aggregate	Producer/Supplier	% USED
3/4" Chips	Klotz Sand and Gravel (Lakin, KS) P/S # m008758021	15
3/4" C. Run	Prowers Aggregate West Farm Pit (Lamar, CO) P/S # m010578112	37
Scrns.	Klotz Sand and Gravel (Lakin, KS) P/S # m008758021	33
Sand	J & R Sand Co, Winchell Pit (Beaver Co., OK) P/S # m002050402	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, Valero (Halstead, KS), m00964 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	3/4" Chips	3/4" C. Run	Scrns.	Sand	Comb. Agg.	% Tol. (±)			
						JMF	Min.	Max.	% Tol. (±)
3/4 in (19 mm)	100	100	100	100	100	100	100	100	0
1/2 in (12.5 mm)	65	92	100	100	92	92	85	99	7
3/8 in (9.5 mm)	38	83	100	100	84	84	77	91	7
#4 (4.75 mm)	6	58	85	99	65	65	58	72	7
#8 (2.36 mm)	3	44	57	88	49	49	44	54	5
#16 (1.18 mm)	2	34	41	60	35	35	31	39	4
#30 (.600 mm)	2	27	30	36	26	26	22	30	4
#50 (.300 mm)	2	21	21	14	17	17	13	21	4
#100 (.150 mm)	2	14	14	3	11	11	8	14	3
#200 (.075 mm)	1.2	7.9	9.1	2.0	6.4	6.4	4.4	8.4	2
AC Content %					5.1	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 %

0.4

	°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 Aggregates	Required	Units
Durability Index	90	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	0	10 max. %
Fractured Faces	99/96	98/95 min. %
Insoluble Residue	94.9	40 min. %
LA Abrasion	30	40 max. %
Micro-Deval	6.7	25 max. %
Permeability	1.8	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	77	50 min. %
Pba	0.6	
IOC	0.28	%
Gse	2.643	
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)			
	% Density		
	# Gyr.	of Gmm	% Density Required
Nini	8	88.2	85.5 - 89.0
Ndes	80		96.0

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density		% VMA	% VFA	
			of Gmm	% Density Required		Design / Field	% VFA Required
4.6	2.322	2.460	94.4	Design / Field	14.9	Design / Field	62.4
5.1	2.344	2.442	96.0	96.0 / 94.5 - 97.4	14.5	14.5 / 14.0	72.4
5.6	2.364	2.424	97.5		14.2		82.4

Dust Prop.	Dust Prop. Req.	ITS (PSI) 250.3 75 min.
1.6	0.6 - 1.6	TSR 0.90 0.80 / 0.75 min. (Design / Field)
1.4		Compacted Wt. (lbs/sy/1" thick) = 107.4 @ 5.1 % Asphalt Cement
1.3		

Hamburg Rut Test Depth (mm) 2.56 12.50 max. @ 20,000 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: 4/20/2018
(mm/dd/yyyy)