



# Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S4 (PG 70-28 OK) Mat'l. Code: asco011  
 (Material Full Name and Material Code)  
 Venture Corporation P/S # m00719  
 (Producer/Supplier Name and Producer/Supplier Code)  
 Venture Corporation #2-Portable-400TPH PLANT ID # m00719-02  
 (Plant Name and Plant ID)

Insoluble ID: I1  
 (Design Type and Design Type ID)  
 WS4c00931800300  
 (Mix ID)

Aggregate	Producer/Supplier	% USED
#67 Rock	APAC-Central #066 (Pawhuska, OK) P/S # m001505703	15
Man. Sand	APAC-Central #066 (Pawhuska, OK) P/S # m001505703	27
Coarse Scrns.	APAC-Central #066 (Pawhuska, OK) P/S # m001505703	5
CM-5	Bingham S & G (Baxter Springs, KS) P/S # m001578009	38
Sand (Unlisted Source)	Pond Creek Dry Back Sand, Grant Co.	15
Warm Mix Asphalt (WMA) Technology: EVOTHERM (Chem. Add.) qual028 Ingevity m00941 (Product Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		
Asphalt Additive, Anti-Strip: AD-HERE HP-PLUS addi003 ARR-MAZ Products, LP (Winter Haven, FL) m00070 (Product Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		
Asphalt Cement: Asphaltic Cement Type PG 70-28 OK, acem002, HollyFrontier (Catoosa, OK), m01028 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:						Comb. Agg.	% Tol. (±)			
	#67 Rock	Man. Sand	Coarse Scrns.	CM-5	Sand (Unlisted Source)			JMF	Min.	Max.	
3/4 in (19 mm)	100	100	100	100	100	100	100	100	100	0	
1/2 in (12.5 mm)	51	100	100	100	100	93	93	86	100	7	
3/8 in (9.5 mm)	20	100	100	99	100	88	88	81	95	7	
#4 (4.75 mm)	6	96	100	30	100	58	58	51	65	7	
#8 (2.36 mm)	2	57	80	4	100	36	36	31	41	5	
#16 (1.18 mm)	1	29	51	3	99	27	27	23	31	4	
#30 (.600 mm)	1	16	35	2	95	21	21	17	25	4	
#50 (.300 mm)	1	8	26	2	82	17	17	13	21	4	
#100 (.150 mm)	1	6	20	2	35	9	9	6	12	3	
#200 (.075 mm)	0.9	4.4	16.9	1.1	10.5	4.2	4.2	2.2	6.2	2	
AC Content %						4.9	4.9	4.5	5.3	0.4	
Asphalt Additive, Anti-Strip %						0.5					
Warm Mix Asphalt (WMA) Additive %						0.4					

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

°F (°C) Required  
 Mix temperature @ discharge from mixer: 275 (135) ± 20 °F (± 10 °C)  
 Optimum roadway compaction temperature: 230 (110)  
 Laboratory mixing temperature: 275 (135)  
 Laboratory compaction temperature: 260 (127)

Tests on Asphalt Cement	Found
Specific Gravity @ 77 °F	1.0100

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

	% Density		
	# Gyr.	of Gmm	% Density Required
Nini	7	88.0	85.5 - 90.5
Ndes	65		96.0

Tests on Aggregates	Required	Units
Durability Index	76	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	1	10 max. %
Fractured Faces	100/100	95/90 min. %
Insoluble Residue	56.6	40 min. %
LA Abrasion	24	40 max. %
Micro-Deval	12.3	N/A %
Permeability	10.8	12.5 max. 10 <sup>-5</sup> cm/s
Sand Equivalent	66	45 min. %
Pba	0.2	%
IOC	0.03	%
Gse	2.642	
Gsb	2.628	
Specimen Weight	4725	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required	% VFA
			of Gmm	% Density Required			
4.3	2.337	2.470	94.6	Design / Field	14.9	Design / Field	63.8
4.8	2.343	2.452	95.6	96.0 / 94.5 - 97.4	15.1	14.5 / 14.0	70.9
5.3	2.353	2.434	96.7		15.2		78.3

ITS (PSI) 104.5 N/A min.  
 TSR 0.85 0.80 / 0.75 min. (Design / Field)  
 Compacted Wt. (lbs/sy/1" thick) = 107.7 @ 4.9 % Asphalt Cement

Hamburg Rut Test Depth (mm) 3.32 12.50 max. @ 15,000 cycles

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

Comments: Similar to WS4qc0411701300 (Plant ID Change)

Last Modified By: Suitor, Kevin ksutor  
 (User Name and User ID)

Date: 1/10/2018  
 (mm/dd/yyyy)