



# 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)  
 Tulsa Asphalt Co P/S # m00355  
 (Producer/Supplier Name and Producer/Supplier Code)  
 Tulsa Asphalt Co #2 (Tulsa, OK) 300TPH PLANT ID # m00355-02  
 (Plant Name and Plant ID)

Insoluble ID: I1  
 (Design Type and Design Type ID)  
 S4c00931300701  
 (Mix ID)

Aggregate	Producer/Supplier	% USED
#67 Rock	Anchor Stone (Owasso, OK) P/S # m001156603	14
Mine Chat	Mine Chat @ Tri City Area P/S # MineChat	26
Man. Sand	Anchor Stone (Owasso, OK) P/S # m001156603	33
Scrns.	Anchor Stone (Owasso, OK) P/S # m001156603	11
Sand	Anchor Sand, Delaware Ave. (Jenks, OK) P/S # m001137217	15
B. H. Fines	Contractor / Project Site P/S # Contractor	1
<b>Asphalt Cement:</b> Asphaltic Cement Type PG 64-22 OK, acem003, Asphalt Terminals and Transp LLC (Muskogee, OK), m00783 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:							Comb. Agg.	Requirements			
	Anchor Stone (Owasso, OK) P/S # m001156603	Mine Chat @ Tri City Area P/S # MineChat	Anchor Stone (Owasso, OK) P/S # m001156603	Anchor Stone (Owasso, OK) P/S # m001156603	Anchor Sand, Delaware Ave. (Jenks, OK) P/S # m001137217	Contractor / Project Site P/S # Contractor			JMF	Min.	Max.	% Tol. (±)
#67 Rock	99	100	100	100	100	100	100	100	100	100	0	
Mine Chat	62	100	100	100	100	100	95	95	88	100	7	
Man. Sand	26	100	100	100	100	100	90	90	83	97	7	
Scrns.	3	45	92	96	98	100	69	62	55	69	7 x	
Sand	2	8	64	74	87	100	46	42	37	47	5 x	
B. H. Fines	2	3	38	50	70	100	31	31	27	35	4	
3/4 in (19 mm)	2	1	20	35	46	100	19	19	15	23	4	
1/2 in (12.5 mm)	2	1	9	27	17	100	10	10	6	14	4	
3/8 in (9.5 mm)	2	1	5	22	2	100	6	6	3	9	3	
#4 (4.75 mm)	2	1	5	22	2	100	4.5	5.5	3.5	7.5	2 x	
#8 (2.36 mm)	1.0	0.6	3.3	18.4	0.3	100.0	5.7	5.3	4.9	5.7	0.4 x	
#16 (1.18 mm)												
#30 (.600 mm)												
#50 (.300 mm)												
#100 (.150 mm)												
#200 (.075 mm)												
AC Content %												

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

Mix temperature @ discharge from mixer: 305 (152) ± 20 °F (± 10 °C) **Required**  
 Optimum roadway compaction temperature: 290 (143)  
 Laboratory mixing temperature: 325 (163)  
 Laboratory compaction temperature: 300 (149)

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	88.7	85.5 - 91.5
Ndes	50		96.0

Tests on Aggregates	Required	Units
Durability Index	58	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	10	max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue	43.7	30 min. %
LA Abrasion	29.5	40 max. %
Micro-Deval	22.6	N/A %
Permeability	9.6	12.5 max. 10 <sup>-5</sup> cm/s
Sand Equivalent	83	40 min. %
IOC	0.21	%
Gse	2.650	
Gsb	2.584	
Specimen Weight	4700	g

Tests on Compressed Mixtures								
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required		% VFA
			of Gmm	% Density Required		Design / Field	Design / Field	
5.5	2.321	2.433	95.4	Design / Field	15.1	Design / Field	69.5	% VFA Required
6.0	2.340	2.415	96.9	96.0 / 94.5 - 97.4	14.9	14.5 / 14.0	79.2	72 - 77
6.5	2.341	2.397	97.7		15.3		85.0	

**Dust Prop.**  
 1.0  
 0.9  
 0.8

**Dust Prop. Req.**  
 0.6 - 1.6

**ITS (PSI)** 107.3 N/A min.  
**TSR** 0.87 0.80 / 0.75 min. (Design / Field)  
 Compacted Wt. (lbs/sy/1" thick) = 107.3 @ 5.7 % Asphalt Cement

x 1st JMF Revision

**Hamburg Rut Test Depth (mm)** 10.32 12.50 max. @ 10,000 cycles

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

**Comments:** REVISED (AC & GRAD.) Effective 1/16/14 per contractor's request.

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

**Date:** 1/23/2014  
 (mm/dd/yyyy)