



# 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)

Binder - Recycled ID: B2  
(Design Type and Design Type ID)

Dunham's Asphalt Services, Inc. P/S # m00837  
(Producer/Supplier Name and Producer/Supplier Code)

S4pv0291400100  
(Mix ID)

Dunham's Asphalt Services, Inc. PLANT ID # m00837-01  
(Plant Name and Plant ID)

Aggregate	Producer/Supplier	% USED
3/4" Chips	Anchor Stone (Owasso, OK) P/S # m001156603	38
Man. Sand	Anchor Stone (Owasso, OK) P/S # m001156603	35
Sand	Anchor Sand, Delaware Ave. (Jenks, OK) P/S # m001137217	12
Fine R.A.P.	Contractor / Project Site P/S # Contractor	15
Asphalt Cement: Asphaltic Cement Type PG 64-22 OK, acem003, HollyFrontier (Catoosa, OK), m01028 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:				Comb. Agg.	Requirements			% Tol. (±)
	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.	
3/4" Chips	100	100	100	100	100	100	100	100	0
1/2 in (12.5 mm)	73	100	100	100	90	90	83	97	7
3/8 in (9.5 mm)	49	100	100	98	80	80	73	87	7
#4 (4.75 mm)	11	93	98	83	61	61	54	68	7
#8 (2.36 mm)	3	66	90	64	45	45	40	50	5
#16 (1.18 mm)	1	38	75	50	30	30	26	34	4
#30 (.600 mm)	1	19	54	37	19	19	15	23	4
#50 (.300 mm)	1	8	26	26	10	10	6	14	4
#100 (.150 mm)	1	5	3	17	5	5	2	8	3
#200 (.075 mm)	1.4	3.9	0.5	14.8	4.2	4.2	2.2	6.2	2
AC Content %				5.8	6.1	6.1	5.7	6.5	0.4

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	88.1	85.5 - 91.5
Ndes	50		96.0

Tests on Aggregates	Required	Units
Durability Index	67	40 min. %
F.A.A. %U		N/A %
Flat and Elongated	0	10 max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue		N/A %
LA Abrasion	25	40 max. %
Micro-Deval	19.1	N/A %
Permeability	7.8	12.5 max. 10 <sup>-5</sup> cm/s
Sand Equivalent	77	40 min. %
IOC	0.09	%
Gse	2.635	
Gsb	2.588	
Specimen Weight	4675	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required	% VFA
			of Gmm	% Density Required			
5.5	2.252	2.421	93.0	Design / Field	17.8	Design / Field	60.7
6.0	2.299	2.403	95.7	96.0 / 94.5 - 97.4	16.5	14.5 / 14.0	73.9
6.5	2.322	2.386	97.3		16.1		83.2

ITS (PSI) 107.2 N/A min.  
TSR 0.85 0.80 / 0.75 min. (Design / Field)  
Compacted Wt. (lbs/sy/1" thick) = 105.6 @ 6.1 % Asphalt Cement  
5.2 % New Asphalt Cement

Hamburg Rut Test Depth (mm) 1.86 12.50 max. @ 10,000 cycles

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

Comments:

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

Date: 11/3/2014  
(mm/dd/yyyy)