



# 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)  
 Haskell Lemon Const Co (Asphalt) P/S # m00428  
 (Producer/Supplier Name and Producer/Supplier Code)  
 Haskell Lemon (East OKC, OK) - 350TPH PLANT ID # m00428-02  
 (Plant Name and Plant ID)

Insoluble - Recycled ID: I2  
 (Design Type and Design Type ID)  
 S4qc0131393100  
 (Mix ID)

Aggregate	Producer/Supplier	% USED
5/8" Chips	Martin-Marietta (Snyder, OK) P/S # m002323802	30
Man. Sand	Martin-Marietta (Davis, OK) P/S # m002285005	11
C-33 Scrns.	Martin-Marietta (Snyder, OK) P/S # m002323802	14
Scrns.	Martin-Marietta (Snyder, OK) P/S # m002323802	10
Sand	General Materials Inc (Oklahoma City, OK) P/S # m009215515	10
Fine R.A.P.	Contractor / Project Site P/S # Contractor	25
<b>Asphalt Cement:</b> Asphaltic Cement Type PG 64-22 OK, acem003, Valero (Ardmore, OK), m00352 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	5/8" Chips	Man. Sand	C-33 Scrns.	Scrns.	Sand	Fine R.A.P.	Comb. Agg.	%			Tot. (±)
								JMF	Min.	Max.	
3/4 in (19 mm)	100	100	100	100	100	100	100	<b>100</b>	100	100	0
1/2 in (12.5 mm)	86	100	100	100	100	100	96	<b>96</b>	89	100	7
3/8 in (9.5 mm)	61	100	100	100	100	100	88	<b>88</b>	81	95	7
#4 (4.75 mm)	9	94	94	93	99	94	69	<b>69</b>	62	76	7
#8 (2.36 mm)	2	56	68	71	99	71	51	<b>51</b>	46	56	5
#16 (1.18 mm)	2	31	43	50	97	54	38	<b>38</b>	34	42	4
#30 (.600 mm)	1	18	26	35	90	43	29	<b>29</b>	25	33	4
#50 (.300 mm)	1	10	12	23	65	32	20	<b>20</b>	16	24	4
#100 (.150 mm)	1	6	5	14	16	18	9	<b>9</b>	6	12	3
#200 (.075 mm)	1.0	3.8	3.3	9.1	1.5	10.2	4.8	<b>4.8</b>	2.8	6.8	2
AC Content %						5.3	4.8	<b>4.8</b>	4.4	5.2	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)

<b>Tests on Asphalt Cement</b>	<b>Found</b>
Specific Gravity @ 77 ° F	1.0100

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<b>Tests on Compressed Mixtures (@ Design AC)</b>			
	# Gyr.	% Density of Gmm	% Density Required
Nini	6	90.6	85.5 - 91.5
Ndes	50		96.0

Tests on Aggregates	Required	Units
Durability Index	79	40 min. %
F.A.A. %U		N/A %
Flat and Elongated	0	10 max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue	74.7	30 min. %
LA Abrasion	27	40 max. %
Micro-Deval	10.8	N/A %
Permeability	6.6	12.5 max. 10 <sup>-5</sup> cm/s
Sand Equivalent	83	40 min. %
IOC	0.25	%
Gse	2.645	
Gsb	2.625	
Specimen Weight	4790	g

<b>Tests on Compressed Mixtures</b>							
%AC	Gmb	Gmm	% Density		% VMA	% VFA	
			of Gmm	% Density Required		Design / Field	% VFA Required
4.3	2.337	2.473	94.5	96.0 / 94.5 - 97.4	14.8	Design / Field	62.8
4.8	2.357	2.454	96.0		14.5	14.5 / 14.0	72.4
5.3	2.375	2.436	97.5		14.3		82.5

**Dust Prop.**

1.2	<b>Dust Prop. Req.</b>	ITS (PSI) 131.9 N/A min.
1.1	0.6 - 1.6	TSR 0.81 0.80 / 0.75 min. (Design / Field)
1.0		Compacted Wt. (lbs/sy/1" thick) = 108.0 @ 4.8 % Asphalt Cement
		3.5 % New Asphalt Cement

Hamburg Rut Test Depth (mm) 3.75 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: 5/1/2013 (mm/dd/yyyy)