



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)
 PMI-Silver Star P/S # m00565
 (Producer/Supplier Name and Producer/Supplier Code)
 PMI-Silver Star (Moore, OK) - 400TPH PLANT ID # m00565-01
 (Plant Name and Plant ID)

Insoluble - Recycled ID: I2
 (Design Type and Design Type ID)
 WS4pv0261371800
 (Mix ID)

Aggregate	Producer/Supplier	% USED
5/8" Chips	Hanson Aggregates, WRP Inc (Davis, OK) P/S # m001985008	25
3/16" Scrns.	Hanson Aggregates, WRP Inc (Davis, OK) P/S # m001985008	16
Man. Sand	Martin-Marietta (Davis, OK) P/S # m002285005	30
Sand	General Materials Inc (Oklahoma City, OK) P/S # m009215515	9
Fine R.A.P.	Contractor / Project Site P/S # Contractor	20
Warm Mix Asphalt (WMA) Technology: MAXAM (Foaming Process) qual028 Maxam Equipment m00802 (Product Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		
Asphalt Cement: Asphaltic Cement Type PG 64-22 OK, acem003, Valero (Ardmore, OK), m00352 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

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Sieve Size	Producer/Supplier:					Comb. Agg.	% Tol. (±)			
	5/8" Chips	3/16" Scrns.	Man. Sand	Sand	Fine R.A.P.		JMF	Min.	Max.	% Tol. (±)
3/4 in (19 mm)	100	100	100	100	100	100	100	100	0	
1/2 in (12.5 mm)	85	100	100	100	94	95	88	100	7	
3/8 in (9.5 mm)	62	100	100	100	86	88	81	95	7	
#4 (4.75 mm)	16	82	92	100	67	67	60	74	7	
#8 (2.36 mm)	3	57	60	99	51	47	42	52	5	
#16 (1.18 mm)	2	40	26	97	39	31	27	35	4	
#30 (.600 mm)	2	30	13	90	31	24	20	28	4	
#50 (.300 mm)	2	23	7	60	24	16	12	20	4	
#100 (.150 mm)	2	17	4	14	14	8	5	11	3	
#200 (.075 mm)	1.5	12.5	3.0	1.0	8.9	5.1	3.1	7.1	2	
AC Content %					4.2	4.9	4.9	5.3	0.4	

Warm Mix Asphalt (WMA) Additive % 2.0

Mix temperature @ discharge from mixer: 275 (135) °F (°C) **Required** ± 20 °F (± 10 °C)
 Optimum roadway compaction temperature: 260 (127)
 Laboratory mixing temperature: 325 (163)
 Laboratory compaction temperature: 300 (149)

Tests on Aggregates	Required	Units
Durability Index	75	40 min. %
F.A.A. %U		N/A %
Flat and Elongated	0	10 max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue	52.8	30 min. %
LA Abrasion	27	40 max. %
Micro-Deval	10.8	N/A %
Permeability	2.7	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	76	40 min. %
Pba	0.39	
IOC	0.40	%
Gse	2.691	
Gsb	2.663	
Specimen Weight	4855	g

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	88.4	85.5 - 91.5
Ndes	50		96.0

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA
4.8	2.386	2.492	95.7	Design / Field	14.7	Design / Field	70.7
5.3	2.406	2.473	97.3	96.0 / 94.5 - 97.4	14.4	14.5 / 14.0	81.3
5.8	2.431	2.454	99.1		14.0		93.6

Dust Prop.
 1.2 **Dust Prop. Req.** 0.6 - 1.6
 1.0
 0.9

ITS (PSI) 161.3 N/A min.
TSR 0.80 0.80 / 0.75 min. (Design / Field)
Compacted Wt. (lbs/sy/1" thick) = 109.5 @ 4.9 % Asphalt Cement
 4.1 % New Asphalt Cement

Hamburg Rut Test Depth (mm) 2.91 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: 8/31/2016
 (mm/dd/yyyy)