



# Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S3 (PG 64-22 OK) Mat'l. Code: asco009  
 (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)

Binder - Recycled ID: B2  
 (Design Type and Design Type ID)  
 WS3pv0261460100  
 (Mix ID)

Aggregate	Producer/Supplier	% USED
1" Rock	Hanson Aggregates, WRP Inc (Davis, OK) P/S # m001985008	10
5/8" Chips	Hanson Aggregates, WRP Inc (Davis, OK) P/S # m001985008	27
3/16" Scrms.	Hanson Aggregates, WRP Inc (Davis, OK) P/S # m001985008	12
Man. Sand	Martin-Marietta (Davis, OK) P/S # m002285005	15
Sand	General Materials Inc (Oklahoma City, OK) P/S # m009215515	11
Fine R.A.P.	Contractor / Project Site P/S # Contractor	25
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, Lion Oil Co. (Muskogee, OK), m00511 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:							Comb. Agg.	Tol. (%)			
	Hanson Aggregates, WRP Inc (Davis, OK) P/S # m001985008	Hanson Aggregates, WRP Inc (Davis, OK) P/S # m001985008	Hanson Aggregates, WRP Inc (Davis, OK) P/S # m001985008	Martin-Marietta (Davis, OK) P/S # m002285005	General Materials Inc (Oklahoma City, OK) P/S # m009215515	Contractor / Project Site P/S # Contractor			JMF	Min.	Max.	(±)
1" Rock	100	100	100	100	100	100	100	100	100	100	0	
3/4 in (19 mm)	76	100	100	100	100	100	98	98	91	100	7	
1/2 in (12.5 mm)	31	81	100	100	100	99	88	88	81	95	7	
3/8 in (9.5 mm)	9	46	100	100	100	96	75	75	68	82	7	
#4 (4.75 mm)	2	8	100	96	100	81	60	60	53	67	7	
#8 (2.36 mm)	2	2	77	59	99	61	45	45	40	50	5	
#16 (1.18 mm)	2	2	49	32	98	47	34	34	30	38	4	
#30 (.600 mm)	2	2	32	18	91	37	27	27	23	31	4	
#50 (.300 mm)	2	2	22	11	54	28	18	18	14	22	4	
#100 (.150 mm)	2	2	15	6	10	17	9	9	6	12	3	
#200 (.075 mm)	1.3	1.5	11.1	3.9	1.4	10.6	5.3	5.3	3.3	7.3	2	
AC Content %						5.5	4.4	4.4	4.0	4.8	0.4	

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

Warm Mix Asphalt (WMA) Additive % 2.0

°F (°C) **Required**  
 Mix temperature @ discharge from mixer: 275 (135) ± 20 °F (± 10 °C)  
 Optimum roadway compaction temperature: 260 (127)  
 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 Aggregates	Required	Units
Durability Index	80	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	24	40 max. %
Micro-Deval	9.7	N/A %
Permeability	0.2	12.5 max. 10 <sup>-5</sup> cm/s
Sand Equivalent	79	40 min. %
Pba	0.42	
IOC	0.50	%
Gse	2.716	
Gsb	2.686	
Specimen Weight	4940	g

Tests on Compressed Mixtures (@ Design AC)			
	# Gyr.	% Density of Gmm	% Density Required
Nini	6	90.2	85.5 - 91.5
Ndes	50		96.0

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA
4.3	2.426	2.532	95.8	Design / Field	13.6	Design / Field	69.1
4.8	2.447	2.512	97.4	96.0 / 94.5 - 97.4	13.3	13.5 / 13.0	80.5
5.3	2.468	2.493	99.0		13.0		70 - 75

ITS (PSI) 95 N/A min.  
 TSR 0.83 0.80 / 0.75 min. (Design / Field)  
 Compacted Wt. (lbs/sy/1" thick) = 111.2 @ 4.4 % Asphalt Cement  
 3.0 % New Asphalt Cement

Hamburg Rut Test Depth (mm) 3.95 #N/A

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

Comments:

Last Modified By:

Suitor, Kevin ksuitor  
 (User Name and User ID)

Date: 3/5/2018  
 (mm/dd/yyyy)