



Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S4 (PG 64-22 OK) Mat'l. Code: asco012

Binder ID: B1

(Material Full Name and Material Code)

(Design Type and Design Type ID)

Cummins Const Co P/S # m00556

WS4qc0101790700

(Producer/Supplier Name and Producer/Supplier Code)

(Mix ID)

(Plant Name and Plant ID)

Aggregate	Producer/Supplier	% USED
5/8" Chips	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	10
1/2" Chips	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	25
Stone Sand	Dolese Co. (Richards Spur, OK) P/S # m002761601	35
Scrns.	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	20
Sand (Unlisted Source)	GMI Sand OKC, OK	10
Warm Mix Asphalt (WMA) Technology TEREX (Foaming Process) qual028 Terex Roadbuilding m00801 (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)		

Sieve Size	Producer/Supplier:						Comb. Agg.	Requirements			% Tol. (±)
	5/8" Chips	1/2" Chips	Stone Sand	Scrns.	Sand (Unlisted Source)			JMF	Min.	Max.	
3/4 in (19 mm)	100	100	100	100	100	100	100	100	100	0	
1/2 in (12.5 mm)	35	100	100	100	100	94	94	87	100	7	
3/8 in (9.5 mm)	5	84	100	99	100	86	86	79	93	7	
#4 (4.75 mm)	2	4	97	79	99	61	61	54	68	7	
#8 (2.36 mm)	2	1	68	55	99	45	45	40	50	5	
#16 (1.18 mm)	1	1	32	33	97	28	28	24	32	4	
#30 (.600 mm)	1	1	17	21	91	20	20	16	24	4	
#50 (.300 mm)	1	1	8	16	59	12	12	8	16	4	
#100 (.150 mm)	1	1	5	14	12	6	6	3	9	3	
#200 (.075 mm)	0.9	0.8	4.1	13.1	2.5	4.6	4.6	2.6	6.6	2	
AC Content %						4.9	4.9	4.5	5.3	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:	300 (149)	
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	89.0	85.5 - 91.5
Ndes	50		96.0

Tests on Aggregates	Required	Units
Durability Index	40	min. %
F.A.A. %U	N/A	%
Flat and Elongated	10	max. %
Fractured Faces	85/80	min. %
Insoluble Residue	2.6	N/A %
LA Abrasion	25	40 max. %
Micro-Deval	12.7	N/A %
Permeability	0	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	75	40 min. %
Pba	0.45	
IOC	0.17	%
Gse	2.700	
Gsb	2.668	
Specimen Weight	4800	g

Tests on Compressed Mixtures								
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA	% VFA Required
4.4	2.364	2.515	94.0	Design / Field	15.3	Design / Field	60.8	72 - 77
4.9	2.394	2.495	96.0	96.0 / 94.5 - 97.4	14.7	14.5 / 14.0	72.8	
5.4	2.416	2.476	97.6		14.3		83.2	

Dust Prop.	Dust Prop. Req.	ITS (PSI)	TSR	Compacted Wt. (lbs/sy/1" thick) =	@	% Asphalt Cement
1.2		123.6	0.88	109.8	4.9	
1.0	0.6 - 1.6	N/A min.	0.80 / 0.75 min. (Design / Field)			
0.9						

Hamburg Rut Test Depth (mm) 7.07 12.50 max. @ 10,000 cycles

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

Comments:

Last Modified By:

Suitor, Kevin ksuitar
(User Name and User ID)

Date:

7/14/2017
(mm/dd/yyyy)