



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)
 Cummins Const Co P/S # m00556
 (Producer/Supplier Name and Producer/Supplier Code)
 Cummins Const Co (Ada, OK) - 300TPH PLANT ID # m00556-05
 (Plant Name and Plant ID)

Insoluble ID: I1
 (Design Type and Design Type ID)
 WS4qc0101351300
 (Mix ID)

Aggregate	Producer/Supplier	% USED
5/8" Chips	Martin-Marietta (Mill Creek, OK) P/S # m002303502	20
'D' Rock	Martin-Marietta (North Troy, OK) P/S # m007003506	20
Man. Sand	TXI Mill Creek Stone Plant P/S # m005253504	30
'D' Sand	Martin-Marietta (Mill Creek, OK) P/S # m002303502	20
Sand (Unlisted Source)	Cummins Sand (Ada, 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:					Sand (Unlisted Source)	Comb. Agg.	%			
	5/8" Chips	'D' Rock	Man. Sand	'D' Sand	Sand (Unlisted Source)			JMF	Min.	Max.	Tol. (±)
3/4 in (19 mm)	100	100	100	100	100	100	100	100	100	0	
1/2 in (12.5 mm)	75	100	100	100	100	95	95	88	100	7	
3/8 in (9.5 mm)	40	95	100	100	100	87	87	80	94	7	
#4 (4.75 mm)	9	18	95	97	100	63	63	56	70	7	
#8 (2.36 mm)	3	5	82	76	100	51	51	46	56	5	
#16 (1.18 mm)	2	4	58	52	100	39	39	35	43	4	
#30 (.600 mm)	1	3	39	35	99	29	29	25	33	4	
#50 (.300 mm)	1	2	25	22	87	21	21	17	25	4	
#100 (.150 mm)	1	1	10	13	50	11	11	8	14	3	
#200 (.075 mm)	0.8	0.6	5.2	8.4	16.2	5.1	5.1	3.1	7.1	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

Mix temperature @ discharge from mixer: 275 (135) ± 20 °F (± 10 °C) **Required**
 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	89.8	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	100/100 85/80 min.	%
Insoluble Residue	50.6 30 min.	%
LA Abrasion	23 40 max.	%
Micro-Deval	13.2 N/A	%
Permeability	2.1 12.5 max.	10 ⁻⁵ cm/s
Sand Equivalent	78 40 min.	%
Pba	0.46	
IOC	0.50	%
Gse	2.741	
Gsb	2.707	
Specimen Weight	4850	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required	% VFA
			of Gmm	% Density Required			
4.4	2.377	2.549	93.3	Design / Field	16.1	Design / Field	58.4
4.9	2.427	2.529	96.0	96.0 / 94.5 - 97.4	14.7	14.5 / 14.0	72.8
5.4	2.433	2.509	97.0		15.0		80.0

Dust Prop.	Dust Prop. Req.
1.3	0.6 - 1.6
1.1	
1.0	

ITS (PSI) 210.9 N/A min.
 TSR 0.86 0.80 / 0.75 min. (Design / Field)
 Compacted Wt. (lbs/sy/1" thick) = 111.2 @ 4.9 % Asphalt Cement

Hamburg Rut Test Depth (mm) 2.80 #N/A

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

Comments: _____

Last Modified By: McComack, Hunter J. hmccomac
 (User Name and User ID)

Date: 11/7/2018
 (mm/dd/yyyy)