



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)

S4qc0101301300

(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
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:					Requires Form 93-E0 signed by the Department for production use. -Oklahoma D.O.T. Materials-								
	Martin-Marietta (Mill Creek, OK) P/S # m002303502	Martin-Marietta (North Troy, OK) P/S # m007003506	TXI Mill Creek Stone Plant P/S # m005253504	Martin-Marietta (Mill Creek, OK) P/S # m002303502	Cummins Sand (Ada, OK)					Comb. Agg.	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

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)

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	96.0

Tests on Aggregates	Required	Units
Durability Index	67	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. %
IOC	0.50	%
Gse	2.741	
Gsb	2.707	
Specimen Weight	4850	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA
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
% VFA Required							

Dust Prop.

1.3	Dust Prop. Req.	ITS (PSI) 210.9	N/A min.
1.1	0.6 - 1.6	TSR 0.86	0.80 / 0.75 min. (Design / Field)
1.0		Compacted Wt. (lbs/sy/1" thick) = 111.2	@ 4.9 % Asphalt Cement

Hamburg Rut Test Depth (mm) 2.80 12.50 max. @ 10,000 cycles

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

Comments: _____

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 (User Name and User ID)

Date: 3/25/2013
 (mm/dd/yyyy)