



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 (Enid, OK) - 400TPH PLANT ID # m00556-06
 (Plant Name and Plant ID)

Insoluble ID: I1
 (Design Type and Design Type ID)
 WS4qc0101495900
 (Mix ID)

Aggregate	Producer/Supplier	% USED
5/8" Chips	Dolese Co. (Richards Spur, OK) P/S # m002761601	33
Stone Sand	Dolese Co. (Richards Spur, OK) P/S # m002761601	10
Mine Chat	Mine Chat @ Tri City Area P/S # MineChat	32
Scrns.	Dolese Co. (Richards Spur, OK) P/S # m002761601	10
Sand (Unlisted Source)	Lightle Sand (Hennessey, OK)	15
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, HollyFrontier (Catoosa, OK), m01028 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:						Comb. Agg.	%			
	5/8" Chips	Stone Sand	Mine Chat	Scrns.	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)	96	100	100	100	100	99	99	92	100	7	
3/8 in (9.5 mm)	64	100	100	100	100	88	88	81	95	7	
#4 (4.75 mm)	8	97	76	90	100	61	61	54	68	7	
#8 (2.36 mm)	4	62	51	53	100	44	44	39	49	5	
#16 (1.18 mm)	2	32	31	36	99	32	32	28	36	4	
#30 (.600 mm)	1	17	27	24	77	25	25	21	29	4	
#50 (.300 mm)	1	8	20	18	30	14	14	10	18	4	
#100 (.150 mm)	1	3	15	14	7	8	8	5	11	3	
#200 (.075 mm)	0.7	2.4	9.1	11.5	1.2	4.7	4.7	2.7	6.7	2	
AC Content %						5.1	5.1	4.7	5.5	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 Aggregates	Required	Units
Durability Index	79	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	10	max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue	30.5	30 min. %
LA Abrasion	25	40 max. %
Micro-Deval	12.7	N/A %
Permeability	4.6	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	72	40 min. %
Pba	0.6	%
IOC	0.17	%
Gse	2.653	
Gsb	2.612	
Specimen Weight	4800	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	88.0	85.5 - 91.5
Ndes	50		96.0

Tests on Compressed Mixtures								
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required		% VFA
			of Gmm	% Density Required		Design / Field	Design / Field	
4.6	2.321	2.468	94.0	94.0	15.2	15.2	60.5	% VFA Required
5.1	2.351	2.450	96.0	96.0 / 94.5 - 97.4	14.6	14.5 / 14.0	72.6	72 - 77
5.6	2.362	2.431	97.2		14.6		80.8	

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

ITS (PSI) 127.1 N/A min.
TSR 0.83 0.80 / 0.75 min. (Design / Field)
 Compacted Wt. (lbs/sy/1" thick) = 107.8 @ 5.1 % Asphalt Cement

Hamburg Rut Test Depth (mm) 4.91 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: 2/23/2016
 (mm/dd/yyyy)