



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)
 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)

Binder - Recycled ID: B2
 (Design Type and Design Type ID)
 WS3qc0101496200
 (Mix ID)

Aggregate	Producer/Supplier	% USED
#67 Rock	Dolese Co. (Richards Spur, OK) P/S # m002761601	32
3/8" Chips	Dolese Co. (Richards Spur, OK) P/S # m002761601	10
Stone Sand	Dolese Co. (Richards Spur, OK) P/S # m002761601	22
Scrns.	Dolese Co. (Richards Spur, OK) P/S # m002761601	8
Sand (Unlisted Source)	Lightle Sand (Hennessey, OK)	8
Fine R.A.P.	Contractor / Project Site P/S # Contractor	20

Warm Mix Asphalt (WMA) Technology	TEREX (Foaming Process) qual028 Terex Roadbuilding m00801 (Product Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)
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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)
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Producer/Supplier:	Dolese Co. (Richards Spur, OK) P/S # m002761601	Dolese Co. (Richards Spur, OK) P/S # m002761601	Dolese Co. (Richards Spur, OK) P/S # m002761601	Dolese Co. (Richards Spur, OK) P/S # m002761601	Lightle Sand (Hennessey, OK)	Contractor / Project Site P/S # Contractor	Requires Form 93-E0 signed by the Department for production use. -Oklahoma D.O.T. Materials-					
	#67 Rock	3/8" Chips	Stone Sand	Scrns.	Sand (Unlisted Source)	Fine R.A.P.	Comb. Agg.	JMF	Min.	Max.	Tol. (%)	
1 in (25 mm)	100	100	100	100	100	100	100	100	100	100	0	
3/4 in (19 mm)	94	100	100	100	100	100	98	98	91	100	7	
1/2 in (12.5 mm)	68	100	100	100	100	99	90	90	83	97	7	
3/8 in (9.5 mm)	47	97	100	100	100	98	82	82	75	89	7	
#4 (4.75 mm)	7	20	97	90	100	84	58	58	51	65	7	
#8 (2.36 mm)	3	6	62	53	100	70	41	41	36	46	5	
#16 (1.18 mm)	1	3	32	36	99	53	29	29	25	33	4	
#30 (.600 mm)	1	2	17	24	77	45	21	21	17	25	4	
#50 (.300 mm)	1	1	8	18	30	27	11	11	7	15	4	
#100 (.150 mm)	1	1	3	14	7	17	6	6	3	9	3	
#200 (.075 mm)	0.7	0.8	2.4	11.5	1.2	9.5	3.7	3.7	1.7	5.7	2	
AC Content %						5.0	4.4	4.4	4.0	4.8	0.4	

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	40 min.	%
F.A.A. %U	N/A	%
Flat and Elongated	10 max.	%
Fractured Faces	85/80 min.	%
Insoluble Residue	3.1	%
LA Abrasion	24.3	%
Micro-Deval	12.2	%
Permeability	7.4	10 ⁻⁵ cm/s
Sand Equivalent	74	%
Pba	0.31	
IOC	0.19	%
Gse	2.672	
Gsb	2.650	
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	88.6	85.5 - 91.5
Ndes	50		96.0

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required	% VFA
			of Gmm	% Density Required			
3.9	2.365	2.511	94.2	Design / Field	14.2	Design / Field	59.2
4.4	2.393	2.492	96.0	96.0 / 94.5 - 97.4	13.7	13.5 / 13.0	70.8
4.9	2.394	2.473	96.8		14.1		77.3

Dust Prop.
 1.0 **Dust Prop. Req.**
 0.9 0.6 - 1.6
 0.8

ITS (PSI) 196.8 N/A min.
TSR 0.89 0.80 / 0.75 min. (Design / Field)
 Compacted Wt. (lbs/sy/1" thick) = 109.6 @ 4.4 % Asphalt Cement
 3.4 % New Asphalt Cement

Hamburg Rut Test Depth (mm) 4.19 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: 2/22/2016
 (mm/dd/yyyy)