



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 #2754 (Binger, OK.) - 300TPH PLANT ID # m00556-15
 (Plant Name and Plant ID)

Binder - Recycled ID: B2
 (Design Type and Design Type ID)
 WS3c00931890400
 (Mix ID)

Aggregate	Producer/Supplier	% USED
1 1/2" Rock	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	15
1/2" Chips	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	15
Stone Sand	Dolese Co. (Richards Spur, OK) P/S # m002761601	25
Scrns.	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	10
Sand (Unlisted Source)	GMI Sand OKC, OK	10
Fine R.A.P.	Contractor / Project Site P/S # Contractor	25
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, Coastal Energy (Clinton, OK), m01042 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:							Comb. Agg.	Tol. (%)			
	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	Dolese Co. (Richards Spur, OK) P/S # m002761601	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	GMI Sand OKC, OK	Contractor / Project Site P/S # Contractor			JMF	Min.	Max.	(±)
1 in (25 mm)	100	100	100	100	100	100	100	100	100	100	0	
3/4 in (19 mm)	81	100	100	100	100	100	97	97	90	100	7	
1/2 in (12.5 mm)	30	100	100	100	100	100	90	90	83	97	7	
3/8 in (9.5 mm)	10	84	100	99	100	95	83	83	76	90	7	
#4 (4.75 mm)	1	4	97	79	99	83	64	64	57	71	7	
#8 (2.36 mm)	1	1	62	53	99	67	48	48	43	53	5	
#16 (1.18 mm)	1	1	32	33	97	46	33	33	29	37	4	
#30 (.600 mm)	1	1	17	21	91	32	24	24	20	28	4	
#50 (.300 mm)	1	1	8	16	59	21	15	15	11	19	4	
#100 (.150 mm)	1	1	5	14	12	14	8	8	5	11	3	
#200 (.075 mm)	0.8	0.9	4.1	13.1	2.5	8.5	5.0	5.0	3.0	7.0	2	
AC Content %						5.2	4.4	4.4	4.0	4.8	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) °F (°C) **Required** ± 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	89.5	85.5 - 91.5
Ndes	50		96.0

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	2.2	N/A %
LA Abrasion	25	40 max. %
Micro-Deval	12.7	N/A %
Permeability	11	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	76	40 min. %
Pba	0.27	
IOC	0.20	%
Gse	2.698	
Gsb	2.679	
Specimen Weight	4800	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required	% VFA
			of Gmm	% Density Required			
3.9	2.361	2.533	93.2	Design / Field	15.3	Design / Field	55.6
4.4	2.412	2.513	96.0	96.0 / 94.5 - 97.4	13.9	13.5 / 13.0	71.2
4.9	2.427	2.494	97.3		13.8		80.4

Dust Prop.
 1.4 **Dust Prop. Req.**
 1.2 0.6 - 1.6
 1.1

ITS (PSI) 162.2 N/A min.
TSR 0.80 0.80 / 0.75 min. (Design / Field)
Compacted Wt. (lbs/sy/1" thick) = 110.6 @ 4.4 % Asphalt Cement
 3.1 % New Asphalt Cement

Hamburg Rut Test Depth (mm) 3.40 #N/A

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

Comments: Similar to WS3qc0101790800 (Plant ID Change)

Last Modified By: Suitor, Kevin ksuito

Date: 3/14/2018 (mm/dd/yyyy)